

ORDER NO.PHAMOS0610046C2

Service Manual

Microwave Oven

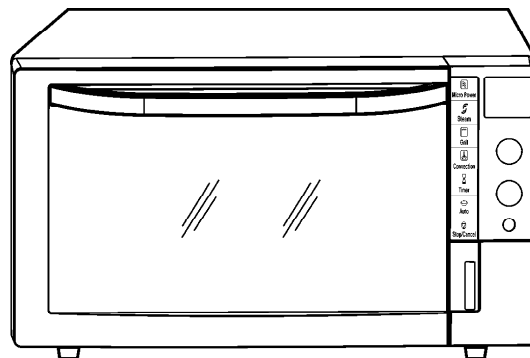
NN-CS596S

BPQ (U.K.)

EPG (France, Italy, Spain, Portugal, Greece, Poland, Holland)

WPG (Switzerland)

SPG (Norway, Finland, Sweden, Denmark)



SPECIFICATIONS

Specification

Models		NN-CS596S BPQ	NN-CS596S EPG	NN-CS596S SPG	NN-CS596S WPG
Power Source:		230V AC Single Phase, 50Hz For EPG, WPG, SPG, models 230V-240V AC Single Phase, 50Hz For BPQ models			
Power Requirement:	Microwave	1100W	1100W	1100W	1100W
	Ceramic Heater	1400W	1300W	1400W	1400W
	Convection Heater	1450W	1450W	1450W	1450W
Output:	Microwave	1000W	1000W	1000W	1000W
	Ceramic Heater	1400W	1300W	1400W	1400W
	Convection Heater	1450W	1450W	1450W	1450W
Microwave Frequency:		2450MHz			
Timer:		90 Min. 00 Sec.			
Outside Dimensions:		523mm(W) x 494mm(D) x 320mm(H)			
Oven Cavity Dimensions:		354mm(W) x 343mm(D) x 205mm(H)			
Weight:		18.5kg			
PbF		This product with PbF			
Specifications subject to change without notice.					

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WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
3. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
4. There are special components used in the microwave oven which are important for safety. These parts are marked with a  on the replacement parts list. It is essential that these critical parts be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

This service manual covers products for following markets.

When troubleshooting or replacing parts, please refer to the country/area identifications shown below for your applicable product specification.

BPQ For U.K.

EPG For France, Italy, Spain, Portugal, Greece, Poland, Holland

WPG..... For Switzerland

SPG For Norway, Finland, Sweden, Denmark

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

- Caution:**
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40°C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to $370 \pm 10^{\circ}\text{C}$.
 - Pb free solder will tend to splash when heated too high (about 600°C).

Panasonic®

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current. **NEW H.V.**

IT HAS: 1. Very high voltage and high current circuits.

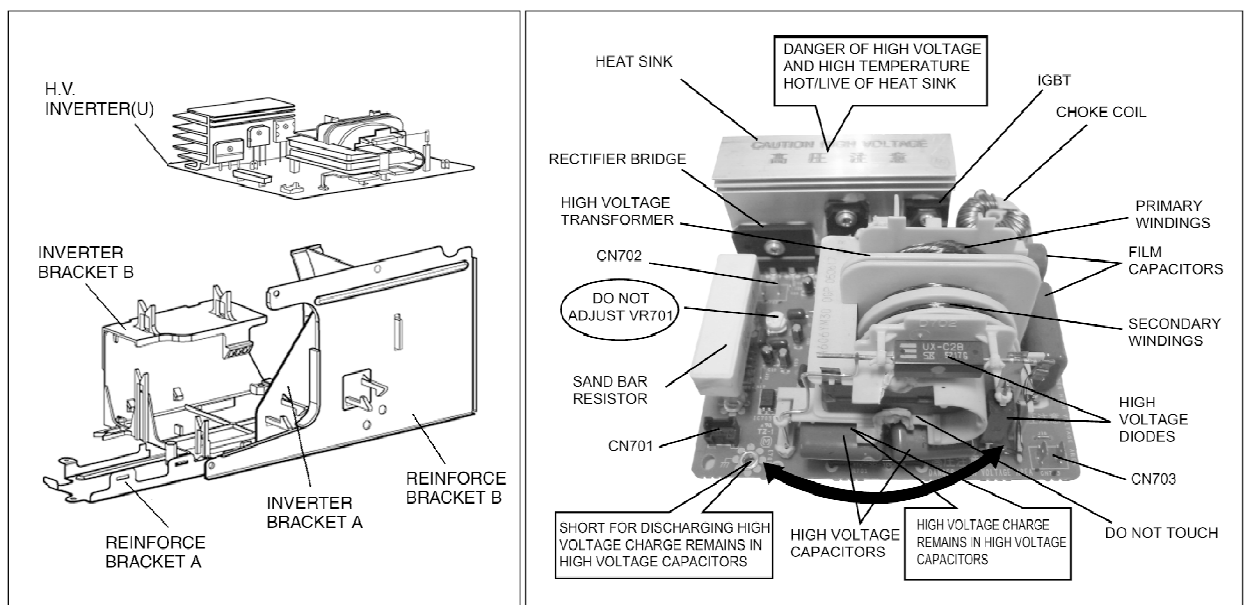
It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.

2. Aluminum heat sink that is energized with very high voltage and high heat energy.
3. Very high voltage which may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.

DO NOT:

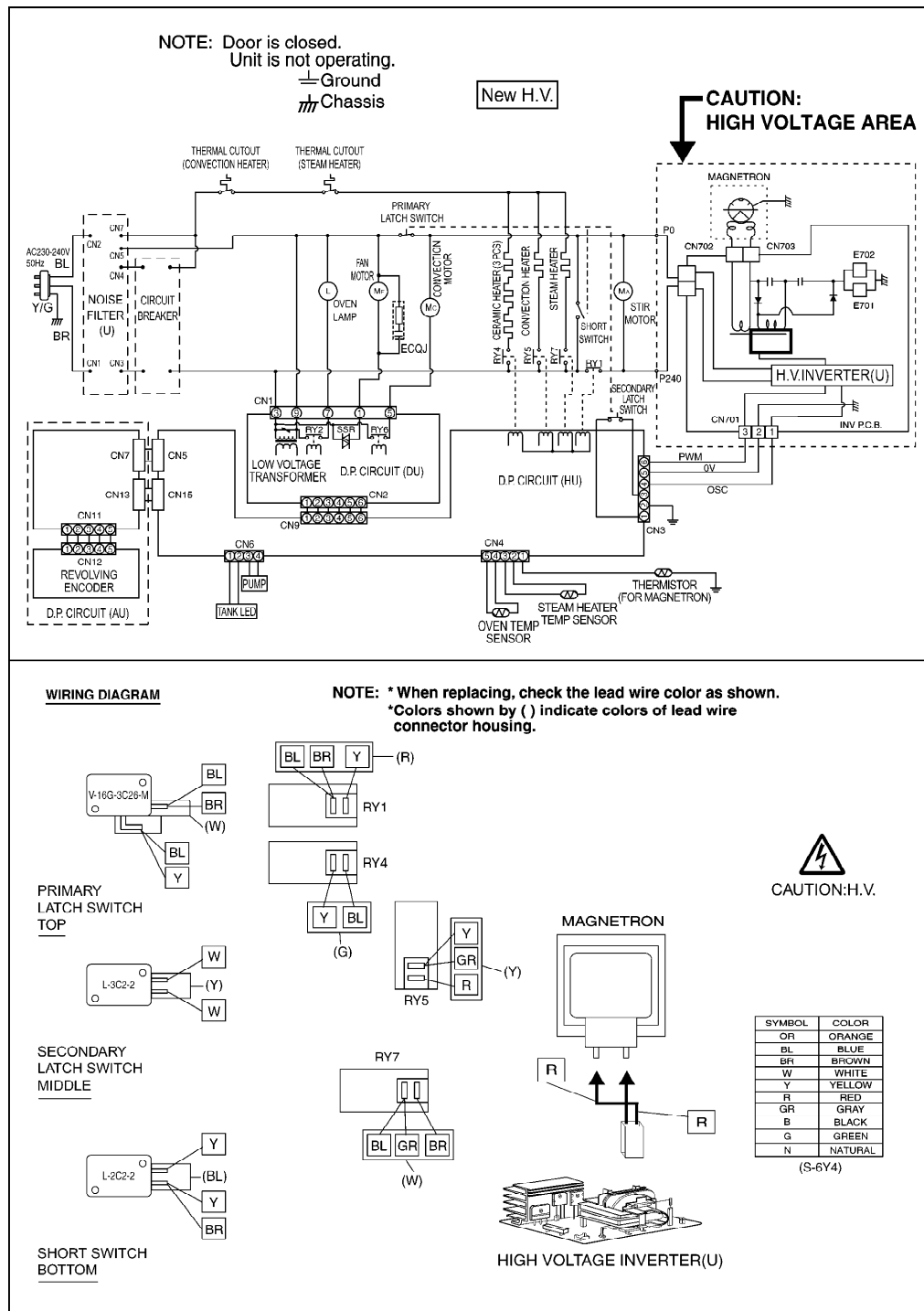
- * 1. Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuits.
- * 2. Do not touch aluminum heat sink because it is energized with very high voltage and is also very hot in high heat energy.
- * 3. Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.
- * 4. Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.

INVERTER POWER SUPPLY

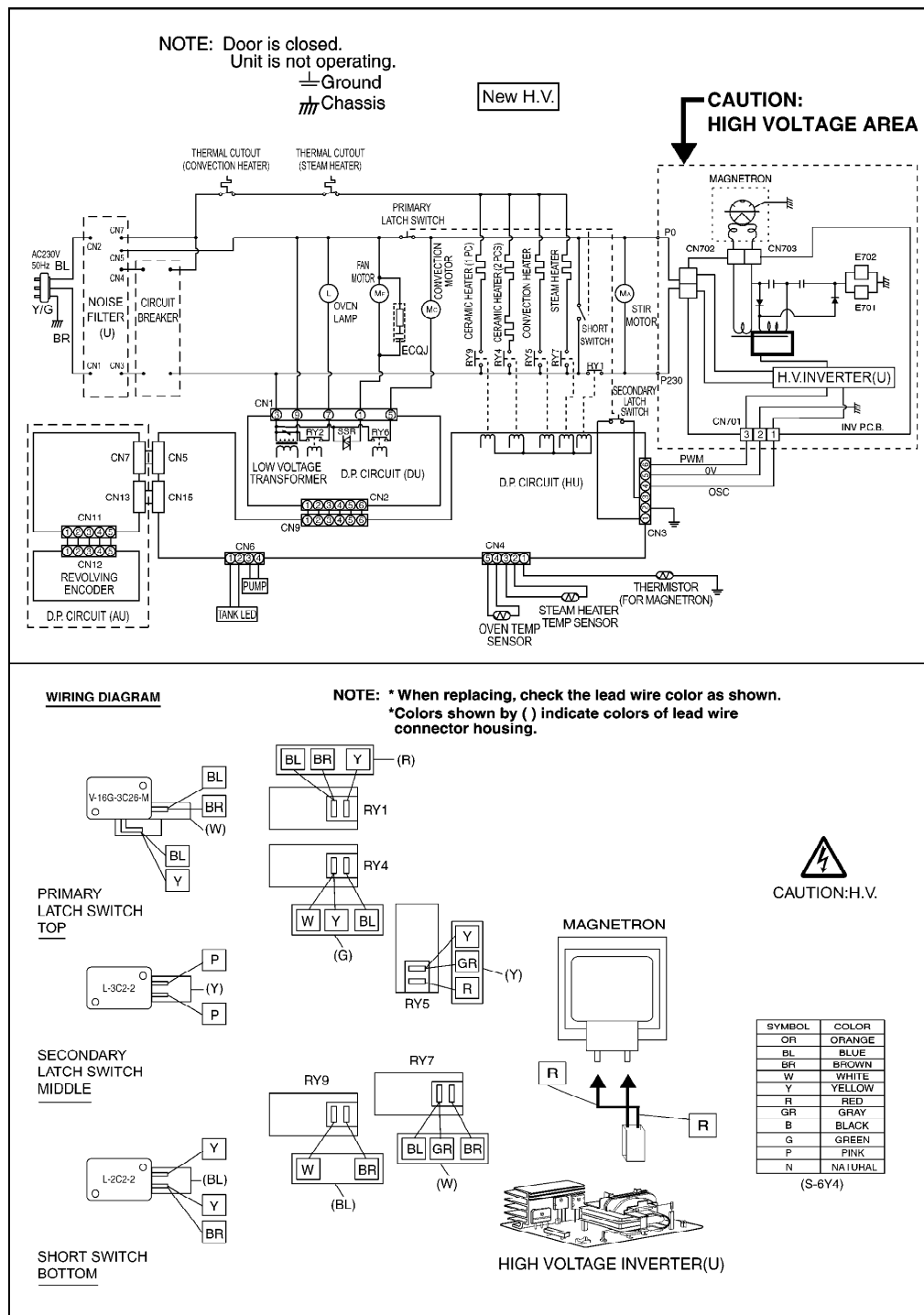


1. SCHEMATIC DIAGRAM

1.1. BPQ/EPG



1.2. WPG/SPG



2. DESCRIPTION OF OPERATING SEQUENCE

2.1. Variable power cooking control

High Voltage Inverter Power Supply (U) controls output power by the signal from Digital Programmer Circuit (DPC). Power relay always stays ON, but PWM (pulse width modulation) signal controls microwave output power.

NOTE:

The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

Variable Power Cooking

POWER SETTING	OUTPUT POWER(%) APPROX.	MANUAL MICROWAVE DUTY	
		ON(SEC)	OFF(SEC)
HIGH	100%	22	0
MEDIUM-HIGH	70%	22	0
MEDIUM	55%	22	0
MEDIUM-LOW	40%	22	0
LOW	20%	13	9
DEFROST	30%	17	5

2.2. Inverter power supply circuit [NEW H.V.]

The Inverter Power Supply circuit powered from the line voltage, 220-240V 50Hz AC input supplies 4,000V DC to the magnetron tube, and functions in place of the H.V. transformer, the H.V. capacitor and H.V. diode.

1. The AC input voltage 220-240V 50Hz is rectified to DC voltage immediately.
2. DC voltage will be supplied to the switching devices called IGBT. These devices are switched ON-OFF by the 20 to 40 KHz PWM (pulse width modulation) signal from the microcomputer in the DPC.
3. This drives the High voltage transformer to increase voltage up to 2,000V AC.
4. Then the half-wave doubler voltage rectifier circuit, consisting of the H.V. diodes and capacitors, generates the necessary 4,000V DC needed for the magnetron.
5. Output power of the magnetron tube is always monitored by the signal output from the current transformer built into the inverter circuit.
6. This signal is fed back to the microcomputer in the DPC to determine operating conditions and output necessary to control PWM signal to the Inverter Power Supply for control of the output power.

2.3. Auto cooking

When the Auto Control feature is selected and the Start pad is tapped:

1. The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.
2. When cooking time in the display window has elapsed, the oven turns off automatically by a control signal from the digital programmer circuit.

2.4. Convection & Grill Convection cooking control

The digital programmer circuit controls the ON-OFF time of the heater in order to control oven cavity temperature.

1. After selecting desired oven cavity temperature of Convection/ Grill Convection (the range of selected oven temp is 100°C-300°C) and pressing [Start] pad, a high level signal comes out of the micro computer and applies to power relay (RY5).
2. When RY5 are switched to ON, power source voltage is applied to the convection heater & upper heater (middle one), and the heaters turn on.
3. The digital programmer circuit senses the oven cavity temperature through oven temp sensor (thermistor). When the oven temperature reaches the set temperature, DPC stops supplying high level signal to the power relays, and the heaters turn off.
4. After the convection heater and upper heater (middle one) turn off, the oven temperature will continue increasing for a while and then decrease as shown in Figure.

When the oven temperature drops below the set temperature, the digital programmer circuit senses the signal and starts supplying a high level signal to RY5 again.

NOTE:

1. If only convection heater works, convection motor would rotate for 5 minute after cooking to cool oven and electric components.
2. After convection or grill convection cooking, fan motor rotates for 5 minutes to cool oven and electric components.

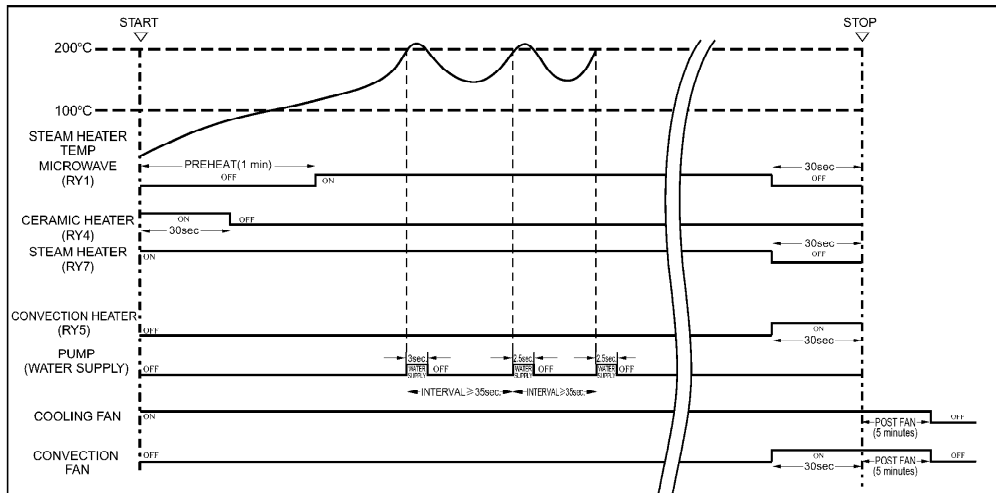
2.5. Steam function (micro steam)

2.5.1. Water Supply

Water in water tank will be pumped out and supply to the steam generation heater located inside back bottom of oven cavity.

2.5.2. Operation

When pressing [start] pad, oven preheat will start and then water supply begins. It will take 1 minute for preheating. When preheat is completed, it will turn into actual cooking process. During heating, the temperature sensor (Thermistor) located on steam heater will monitor steam heater temperature and when it exceeds 200°C, the additional water will be supplied to maintain moisture/steam within oven cavity.



3. CAUTIONS TO BE OBSERVED WHEN / TROUBLESHOOTING

Unlike many other appliances, the microwave oven is a high voltage, high current device. It is free from danger in ordinary use, though extreme care should be taken during repair.

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

3.1. Check the grounding

Do not operate on a two wire extension cord. The microwave oven is designed to be grounded when used. It is imperative, therefore, to ensure the appliance is properly grounded before beginning repair work.

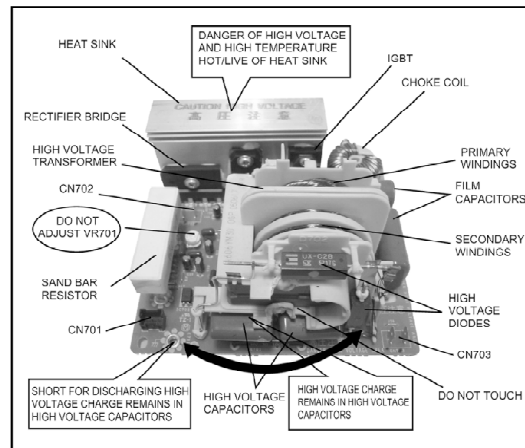
3.2. Inverter warnings

DANGER, HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

The High Voltage Inverter Power Supply handles very high voltage and current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair.

The aluminum heat sink is also energized with high voltage (HOT), do not touch when the AC input terminals are energized. The power device Collector is directly connected to the aluminum heat sink.

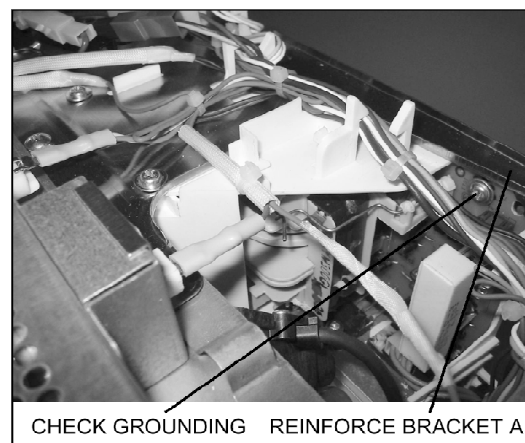
The aluminum heat sink may be HOT due to heat energy, therefore, extreme care should be taken during servicing.



H.V. Inverter warning

WARNING FOR INVERTER POWER SUPPLY (U) GROUNDING

Check the High Voltage Inverter Power Supply circuit grounding. The high voltage inverter power supply circuit board must have a proper chassis ground. The inverter grounding bracket must be connected to the chassis. If the inverter board is not grounded it will expose the user to very high voltages and cause extreme DANGER! Be sure that the inverter circuit is properly grounded via the inverter grounding bracket.



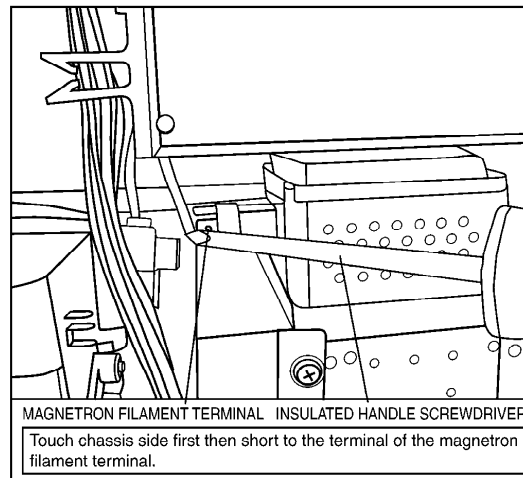
Grounding of the inverter circuit board

WARNING! DISCHARGE THE HIGH VOLTAGE CAPACITORS

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the Inverter Power Supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please be sure to touch the chassis ground side first and then

short to the output terminals.



Discharging the high voltage capacitors

WARNING

There is high voltage present with high current capabilities in the circuits of the primary and secondary windings, choke coil and heat sink of the inverter. It is extremely dangerous to work on or near these circuits with the oven energized. **DO NOT** measure the voltage in the high voltage circuit including the filament voltage of the magnetron.

WARNING

Never touch any circuit wiring with your hand or with an insulated tool during operation.

3.3. Confirm before repair

1. Before repair or replacement of parts, ensure to take out the water tank from microwave oven. Further more, use drainage function, to drain the water remaining in the water pipes and tubes into oven cavity.
2. Wipe up the oven cavity.

WARNING

Before beginning repair work, make sure that there is no water in microwave oven, otherwise the water might invade the electric parts and will cause short circuit even result in electric shock.

3.4. Part replacement

When any part or component is to be replaced, always ensure that the power cord is removed from the wall outlet.

3.5. When the 10A/15A fuse is blown due to the operation of the short switch

WARNING

When the 10A/15A 240V fuse is blown due to the operation of the interlock monitor switch, replace all of the components (primary latch switch, short switch and power relay B (RY1)).

- 1. This is mandatory. Refer to “adjustments and measurements” for the location of these switches.**
- 2. When replacing the fuse, confirm that it has the appropriate rating for these models.**
- 3. When replacing faulty switches, be sure the mounting tabs are not bent, broken or deficient in their ability to hold the switches.**

3.6. Avoid inserting nails, wire etc. through any holes in the unit during operation

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any holes or gaps, because such objects may work as an antenna and cause microwave leakage.

3.7. Confirm after repair

- 1. After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose or missing. Microwave might leak if screws are not properly tightened.**
- 2. Make sure that all electrical connections are tight before inserting the plug into the wall outlet.**
- 3. Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage).**

CAUTION MICROWAVE RADIATION

USE CAUTION NOT TO BECOME EXPOSED TO RADIATION FROM THE MICROWAVE MAGNETRON OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

IMPORTANT NOTICE

The following components have potentials above 2000V while the appliance is operated.

- Magnetron**
- High voltage transformer (Located on inverter (U))**
- High voltage diodes (Located on inverter (U))**
- High voltage capacitors (Located on inverter (U))**

Pay special attention to these areas.

When the appliance is operated with the door hinges or magnetron installed incorrectly, the microwave leakage can exceed more than 5mW/cm². After repair or exchange, it is very important to check if the magnetron and the door hinges are correctly installed.

IMPORTANT NOTICE

After repair or replacement of parts, make sure that all the water pipes and tubes are properly connected, otherwise the water might invade the electric parts and will cause short circuit even result in electric shock.

3.8. Sharp edges

CAUTION

Please use caution when unpacking, installing or moving the unit, as some exposed edges may be sharp to the touch and cause injury if not handled with care.

4. DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

CAUTION

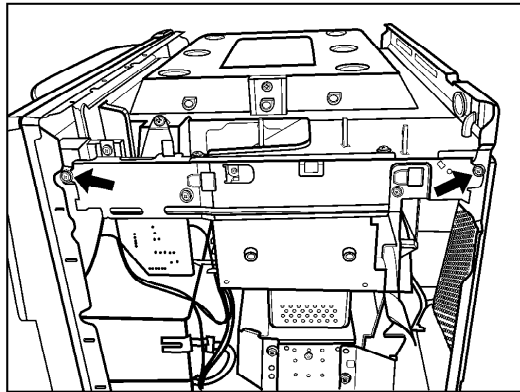
1. Before repair or replacement of parts, ensure to take out the water tank from microwave oven.
2. After removing the water tank, select "drainage" function to drain the water remaining in the water pipes and tubes into oven cavity forcibly. (Operating method: keep pressing [Steam] pad for more than 2 seconds). Then wipe up the oven cavity.
3. The above procedure is to prevent the water from invading the electric parts and resulting in short circuit even electric shock.

CAUTION

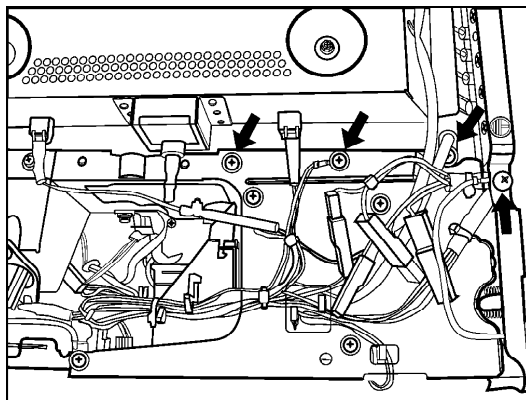
After repair or replacement of parts, make sure that all the water pipes and tubes are properly connected, otherwise the water might invade the electric parts and will cause short circuit even result in electric shock.

4.1. Magnetron

1. Discharge the high voltage capacitor.
2. Remove 2 screws holding reinforce bracket A on oven cavity.



3. Remove 2 screws holding reinforce bracket B on oven cavity.



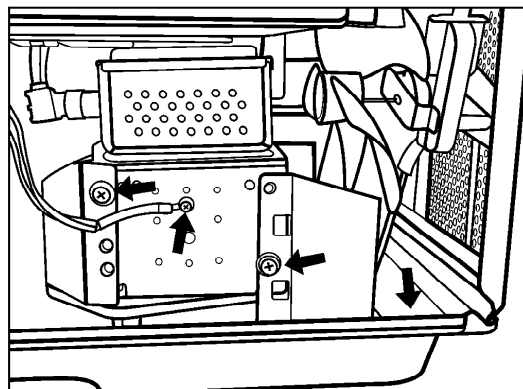
4. Remove 1 screw holding oven thermistor on cavity top plate.

5. Release lead wire harness from locking tabs on inverter bracket A.

6. Disconnect 2 high voltage lead wires from magnetron filament terminals.

7. Remove 1 screw holding thermistor on magnetron.

8. Remove 1 screw holding air guide A on magnetron, then remove air guide A.



9. Remove 2 screws holding air guide B on magnetron & on base

plate respectively, then remove air guide B.

10. Disconnect 2 lead wires from fan motor terminals.

11. Disconnect lead wires from noise filter (U) terminals.

12. Release locking tabs of reinforce bracket A hanging on both sides of oven cavity, then withdraw the reinforce bracket A outside slightly.

NOTE:

Pay attention to the sharp edges of reinforce bracket A.

13. Hold the reinforce bracket A, then remove 4 screws holding magnetron.

NOTE:

After replacement of the magnetron, tighten mounting screws properly in an x pattern, making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION

When replacing the magnetron, be sure the antenna gasket is in place.

CAUTION

When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "F terminal" and the lead wire from high voltage capacitor should be connected to "FA terminal".

4.2. Digital programmer circuit (D.P.C) AU, (D.P.C.) HU, membrane key board and power relay

NOTE:

Be sure to ground any static electric charge built up on your body before handling the DPC.

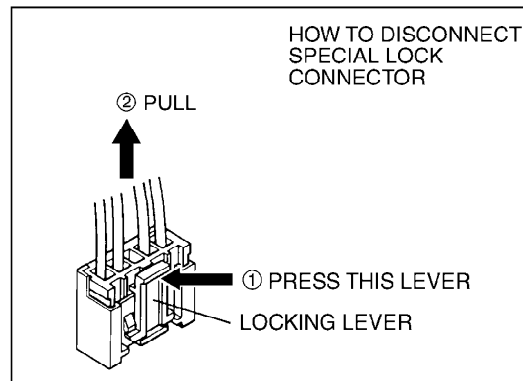
1. Remove water tank from escutcheon base.

2. Keep pressing [Steam] pad for more than 2 seconds to drain the water remaining in the water pipes and tubes into oven cavity.

3. Pull out tube A connecting to pump from copper pipe.

4. Remove wiring connectors CN3, CN4, CN8, CN9 and all

connectors connecting to power relays from D.P.C. board HU.

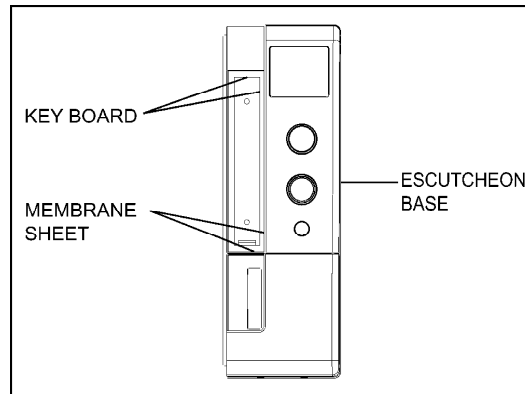


5. Remove wiring connector CN2 from D.P.C. board DU.
 6. Remove 1 screw holding escutcheon base on cavity front plate.
 7. Open the door of oven, slide the escutcheon base upward and out slightly.
 8. Remove connector CN6 connecting pump-LED (U) from D.P.C. board HU.
 9. Remove 2 flat cables connecting between D.P.C. board HU and AU from connectors CN5 & CN15 on D.P.C. board HU by pulling upward slightly.
 10. Remove 2 screws holding D.P.C. board HU on escutcheon base, then remove D.P.C. board HU.
 11. Remove 2 screws holding D.P.C. board AU (big one) on escutcheon base.
 12. Release locking tabs holding D.P.C. board AU (big one) on escutcheon base then remove 5 screws holding D.P.C. board AU (small one) on backstop to remove D.P.C. board AU.
- To replace membrane key board**
13. Use tools such as knife etc. to lift the edge of escutcheon sheet and peel off escutcheon sheet and membrane key board completely from escutcheon base.

NOTE:

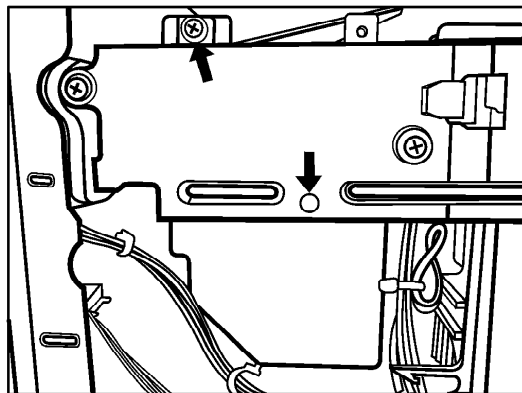
1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal.
2. When installing new membrane key board, make sure that the

surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.



4.3. Digital programmer circuit (D.P.C.) DU and low voltage transformer

1. Remove connectors CN1 & CN2 from D.P.C. board DU.
2. Remove 1 screw holding D.P.C. board DU on reinforce bracket A.
3. Use tools such as pincers to reject the tab of plastic bracket.
4. Remove D.P.C. board DU.



5. Using solder wick or a desoldering tool and 30W soldering iron carefully to remove all solder from the terminal pins of the low voltage transformer and/or power relays.

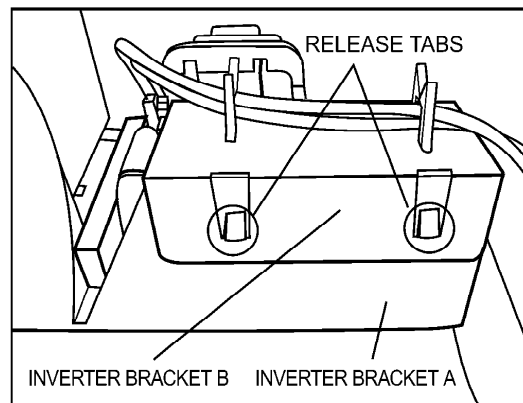
NOTE:

Do not use a soldering iron or desoldering tool of more than 30 watts on D.P.C. contacts.

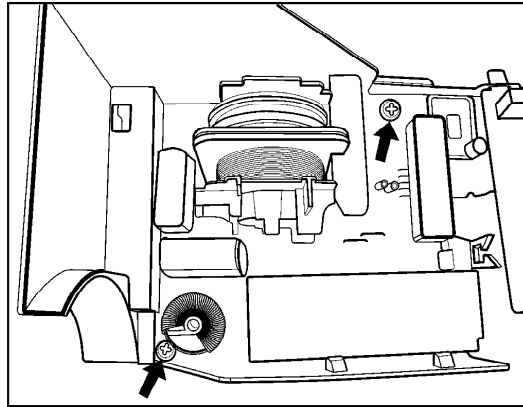
6. With all the terminal pins cleaned and separated from D.P.C. contacts, remove the defective transformer/power relays. Replace components making sure all terminal pins are inserted completely, then resolder all terminal contacts carefully.

4.4. H.V. Inverter

- 1. Discharge high voltage remaining in high voltage capacitor.**
- 2. Remove 2 screws holding reinforce bracket A on oven cavity.**
- 3. Remove 1 screws holding reinforce bracket B on cavity top plate.**
- 4. Remove 1 screw holding oven thermistor on cavity top plate.**
- 5. Release lead wire harness from locking tabs on Inverter bracket A.**
- 6. Disconnect 2 lead wires from noise filter (U) terminals.**
- 7. Disconnect 2 lead wires from fan motor terminals.**
- 8. Disconnect 2 lead wires from the harness of noise filter (U), which connecting to both "Negative" and "live" lead of circuit breaker.**
- 9. Disconnect 2 high voltage lead wires from magnetron filament terminals.**
- 10. Unplug connector CN701 & CN702 from H.V. Inverter board.**
- 11. Remove 1 screw holding Inverter guide bracket on reinforce bracket B, then release locking tabs, detach Inverter guide bracket.**
- 12. Release locking tabs connecting Inverter bracket A with Inverter bracket B detach bracket A & B.**



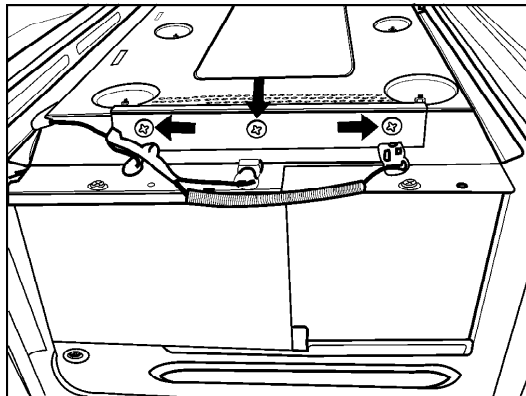
- 13. Remove 2 screws holding H.V. Inverter on Inverter bracket.**



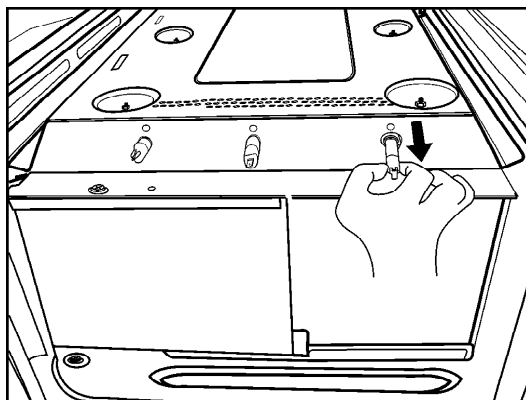
4.5. Upper heaters

For BPQ & EPG models, all the ceramic heaters are 450W/80V. But for SPG & WPG models, there are two kinds of heater, both the front one & back one are 450W/120V heaters, and the middle one is 450W/230V heater.

1. Disconnect lead wires from both sides of 3 upper heaters.
2. Remove 3 screws holding heater support from the left side of microwave oven.



3. Remove the heater by pulling it out.

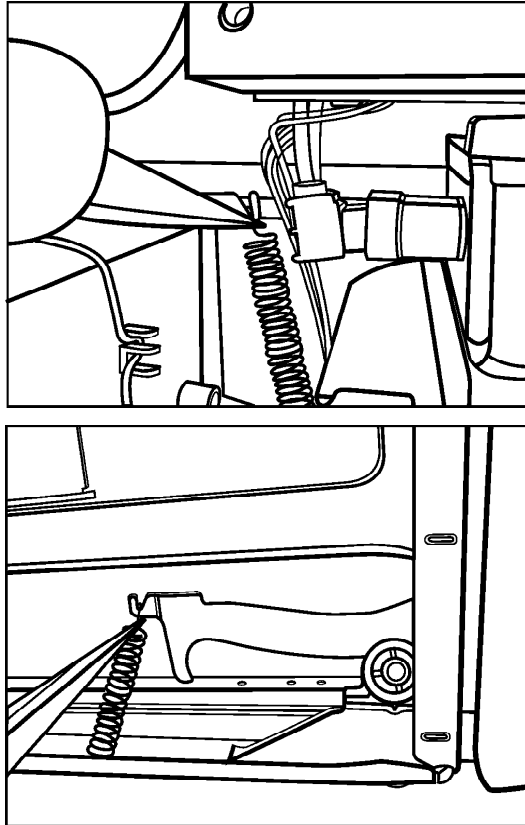


4.6. Door assembly

1. Remove left and right door key springs from door arm with plier.

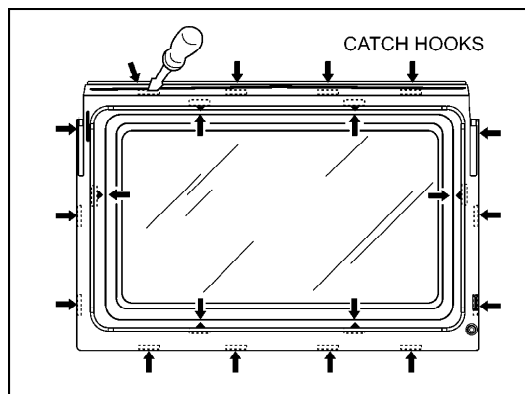
NOTE:

Please support door before operation.



To remove door C and door A (U)

- Insert flat blade screwdriver to release hinge pin from left hinge.
- Release catch hooks between door C and door A, to detach the door C.



Release catch hooks.

NOTE:

After replacement of the defective component parts of the door,

reassemble it properly and adjustment so as to prevent an excessive microwave leakage. Adjustment of the door assembly(Refer page 22).

2. When mounting the door to the oven, be sure to adjust the door parallel to the cavity front plate by moving hinges back or front.

NOTE:

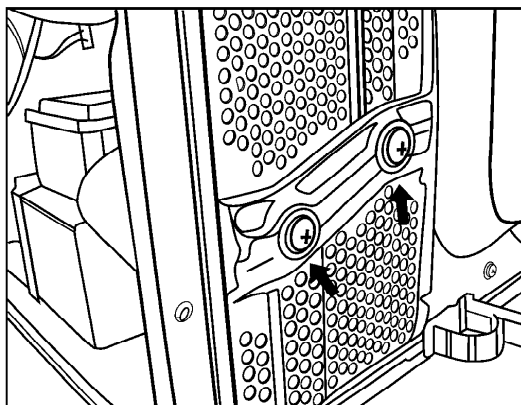
Upper portion of door A should firmly touch the cavity front plate without pushing.

NOTE:

Be sure the gap between lower portion of door A and cavity front plate should be less than 0.5mm.

4.7. Fan motor

1. Disconnect 2 lead wires from fan motor terminals.
2. Remove 2 screws holding air guide B on magnetron & on base plate respectively, then remove air guide B.
3. Remove 2 screws holding fan motor and detach fan motor from oven assy.

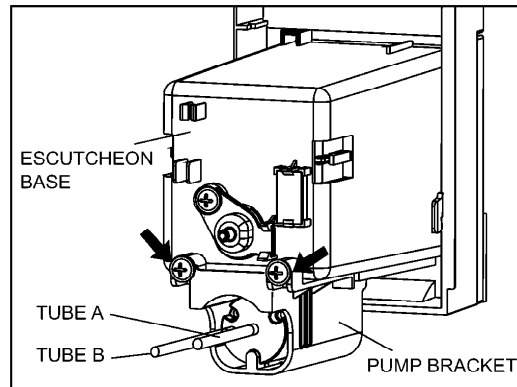


4. Remove fan blade from fan motor shaft by pulling it straight out.

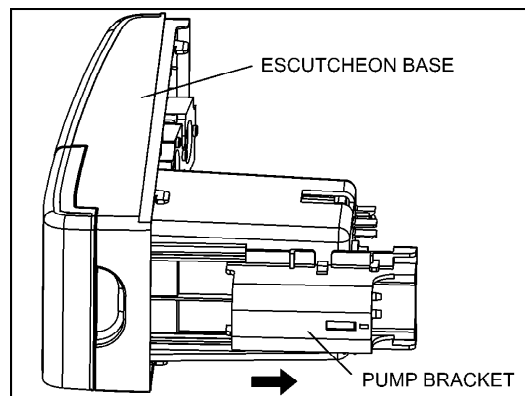
4.8. Pump

1. Remove water tank from escutcheon base.
2. Keep pressing [Steam] pad for more than 2 seconds to drain the water remaining in the water pipes and tubes into oven cavity.
3. Pull out tube A connecting to pump from copper pipe.
4. Remove all wiring connectors from D.P.C board AU.

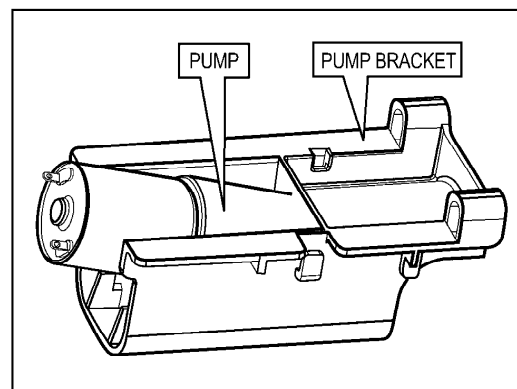
5. Remove 1 grounding screw holding on cavity front plate.
6. Open the door of oven, slide the escutcheon base upward and out slightly.
7. Pull out tube B from inlet of pump.
8. Remove 2 screws holding pump bracket on escutcheon base.



9. Draw out pump bracket from bottom rail of escutcheon base.



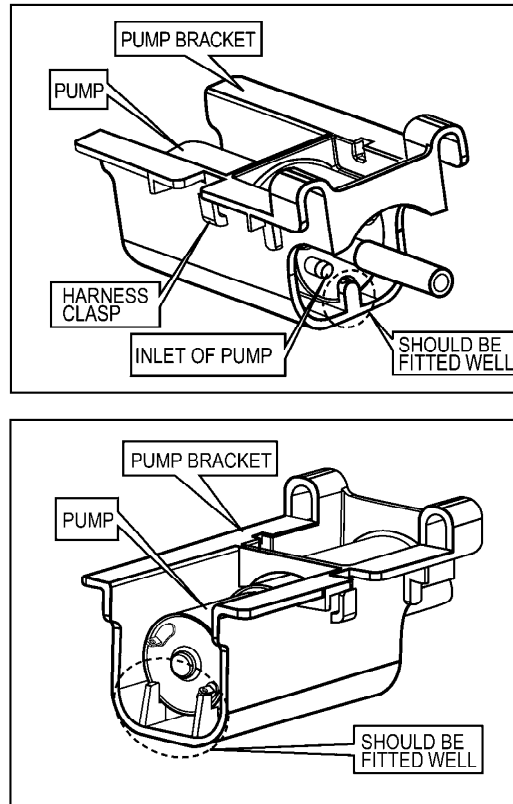
10. Uplift the afterbody of pump slightly to release the tabs of pump bracket, then draw out pump.



11. Pull out tube A from outlet of pump.

To install pump

1. Insert pump into pump bracket (Inlet of pump should be close to harness clasp of pump bracket).
2. Please confirm it is located properly after installing.

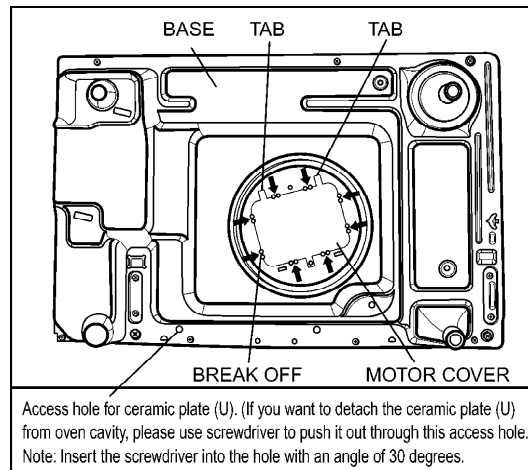


NOTE:

After repairing, when insert copper pipe into tube A, make sure the inserted depth is no less than 9 mm to prevent tube A from slipping.

4.9. Stir motor

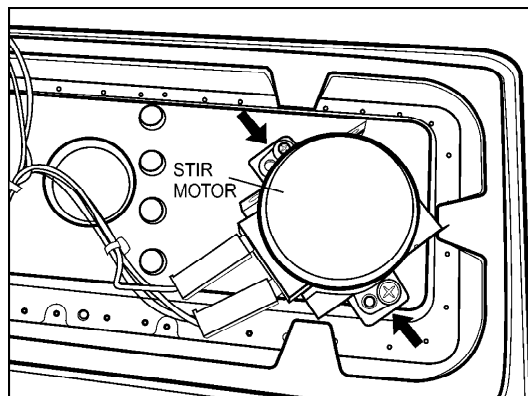
1. Remove the motor cover by breaking off at the 8 spots indicated by arrows with a cutter or the like.



NOTE:

After removing the motor cover, be sure that cut portions are properly trimmed or bent to the Inside so that no sharp edges will be exposed to outside.

2. Disconnect 2 lead wires from stir motor terminals.
3. Remove 2 screws holding stir motor.



NOTE:

After reinstalling the new turntable motor and reconnecting the 2 lead wires, reinstall the motor cover by rotating it around 180, tucking the 2 tabs under the base in the 2 provided slots, then screw the single tab to the base using a screw.

4.10. Heater DU (steam heater)

1. Remove water tank from escutcheon base.
2. Keep pressing [Steam] pad for more than 2 seconds to drain the water remaining in the water pipes and tubes into oven cavity.
3. Remove tubes from both ends of copper pipe.

4. Remove 1 screw holding air guide B on the base.
5. Remove left and right door key springs from door arm.

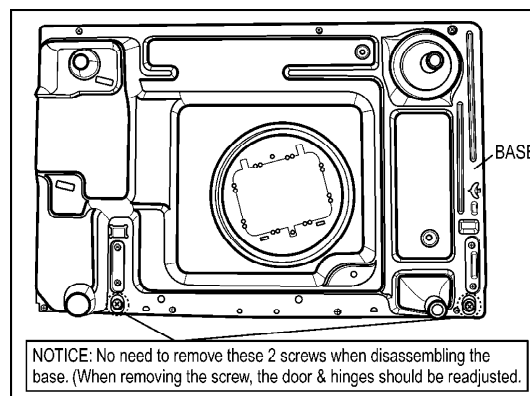
NOTE:

Please support door before operation.

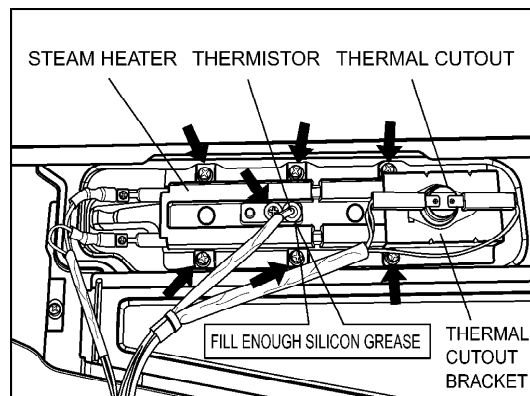
6. Turn over the microwave oven and remove all screws holding base on oven assy & two hinges.

NOTE:

Do not remove two screws holding left and right hinge on the bottom of cavity front plate.



7. Remove base from oven assy.
8. Disconnect 2 lead wires from heater DU terminals.
9. Remove 1 screw holding thermistor on heater DU.



10. Remove 6 screws holding heater DU & thermal cutout bracket on the bottom of oven assy.

To install heater DU

NOTE:

1. Please spread silicon grease evenly between the interface of

heater DU and bottom of oven cavity. (about 0.3mm thickness), this is for good conductivity.

2.Tighten 6 screws and make sure there is no gap between heater DU and bottom of oven cavity.

3.Do not forget to screw the thermal cutout bracket along with heater Du.

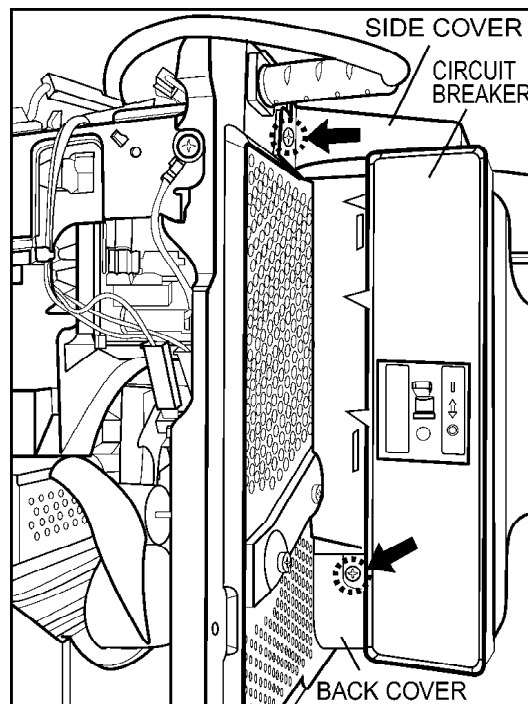
To install thermistor

NOTE:

Before installing thermistor, please fill enough silicon grease into the installation hole of heater DU for good conductivity.

4.11. Convection motor and convection heater

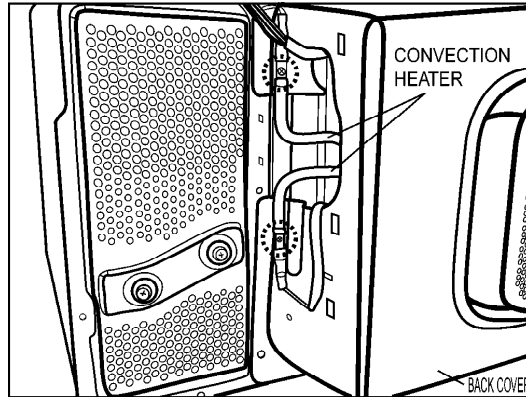
1. Disconnect 2 lead wires from the harness of noise filter (U), which connect to both "Negative" and "live" lead of circuit breaker.(blue and yellow connectors)
2. Disconnect 2 lead wires from circuit breaker harness connecting to main lead wire harness. (black and green connectors)
3. Remove 1 screw holding side cover on cavity back plate.



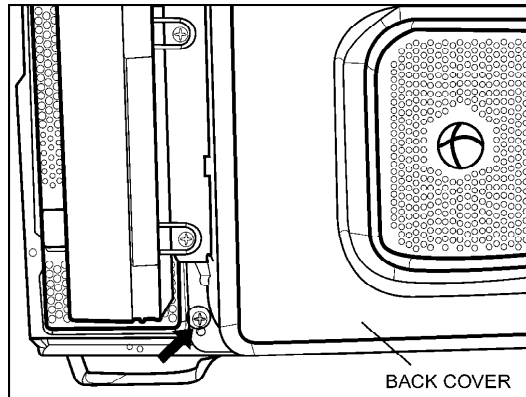
4. Remove 1 screw holding side cover on the side of back cover,

then remove side cover & circuit breaker.

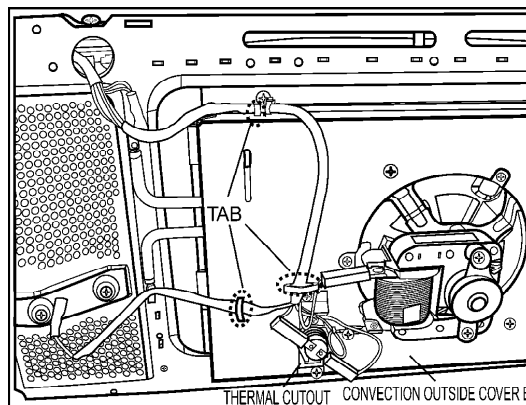
5. Disconnect 2 lead wires from convection heater terminals.



6. Remove 1 screw holding back cover on the lower of back plate, then remove back cover and back cover C module.

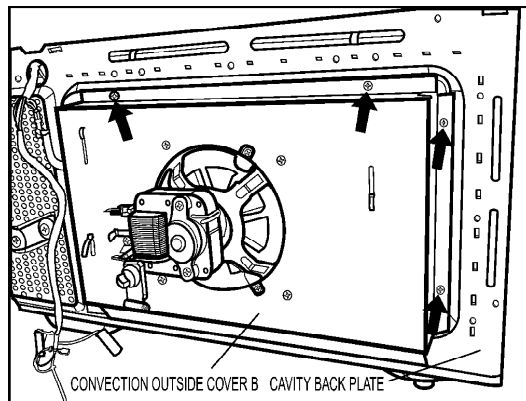


7. Release 3 tabs holding harness on connection outside cover B.

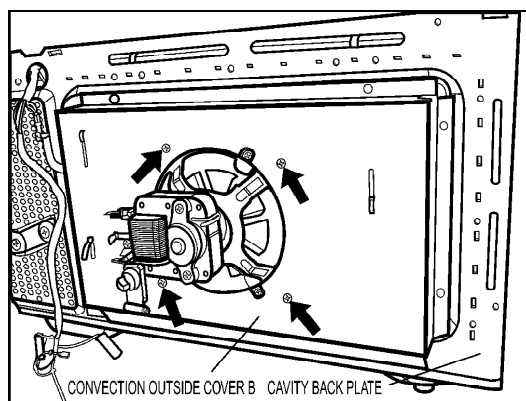


8. Disconnect 2 lead wires from thermal cutout and convection motor terminals respectively.

9. Remove 4 screws holding convection outside cover B on cavity back plate.

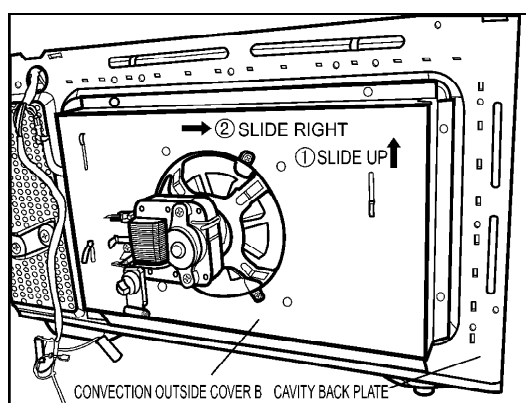


10. Remove 4 screws on the face of convection outside cover B.



11. Release tabs between side of convection outside cover B and cavity back plate, then remove the convection outside cover B.

12. Slide the convection inside cover A upward then rightward and out, then remove the module, which consists of convection inside cover A, convection motor and convection heater.

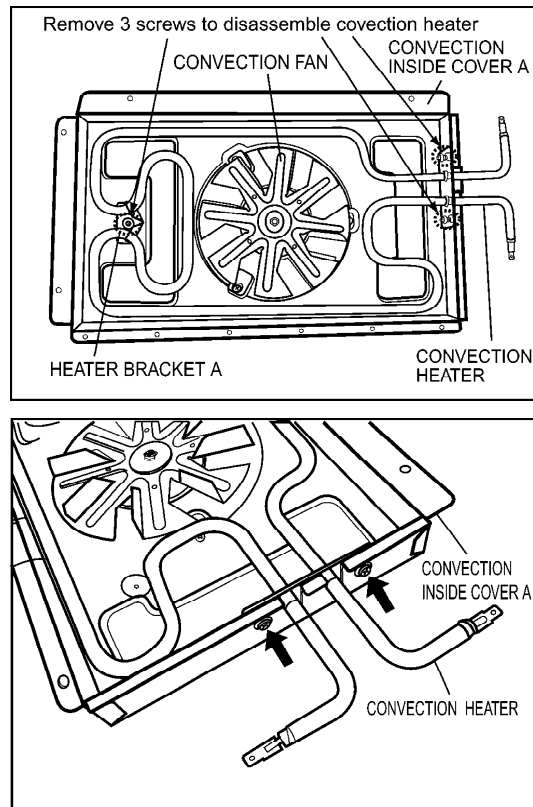


To replace convection heater

13. Remove 1 screw holding heater bracket A on convection inside cover A.

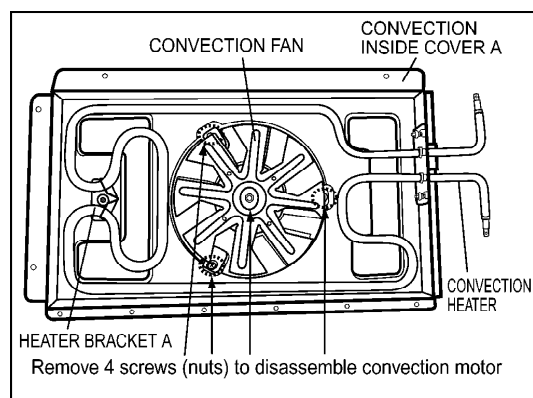
14. Remove 2 screws holding convection heater on convection

inside cover A.

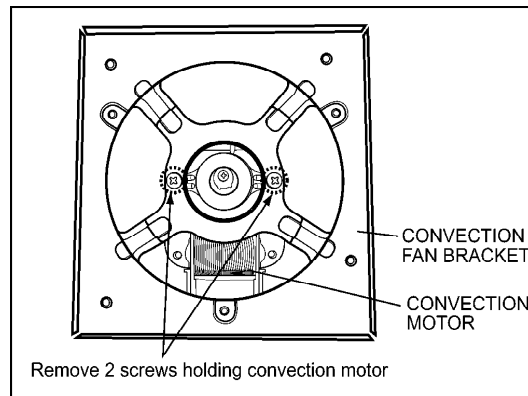


To replace convection motor

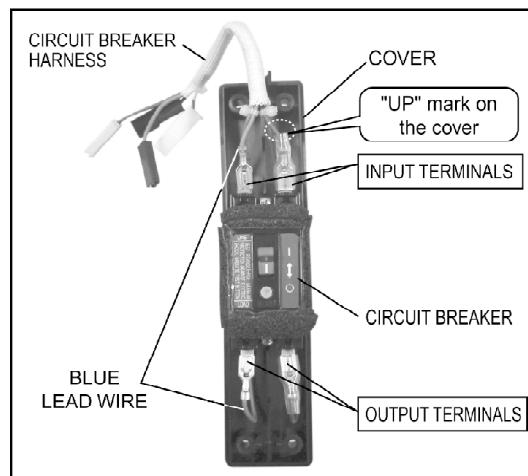
- 15. Remove 1 nut holding convection fan, then remove convection fan.**
- 16. Remove 3 screws holding convection fan bracket on convection inside cover A.**



- 17. Remove 2 screws holding convection motor on convection fan bracket.**



4.12. Circuit breaker



To install the circuit breaker on the cover

NOTE:

1. Ensure the circuit breaker is in right direction as shown in above illustration (Do not install upside down).
2. Before tighten 2 screws, draw the circuit breaker harness(U) in and out slightly to confirm if the lead wire is damaged.(If the lead wire is pressed, the insulation of wire might be damaged and will cause electric shock.)
3. Make sure that the same side input and output lead wires are same colour while connecting the terminals (the left side lead wires are blue). Do not mix up.

5. COMPONENT TEST PROCEDURE

CAUTION [NEW. H.V.]

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

5.1. Primary latch switch (door switch and power relay B) interlocks

1. Unplug lead connectors to Power Relay B and verify open circuit of the power relay B 1-2 terminals.
2. Unplug lead connectors to Primary Latch Switch and Door Switch.
3. Test the continuity of switches at door opened and closed positions with ohm meter (low scale).
Normal continuity readings should be as follows.

	Door Closed	Door Opened
Primary Latch switch	0 Ω (Close)	∞ Ω (Open)
Door Switch	0 Ω (Close)	∞ Ω (Open)
Power Relay B	∞ Ω (Close)	∞ Ω (Open)

5.2. Short switch & monitor

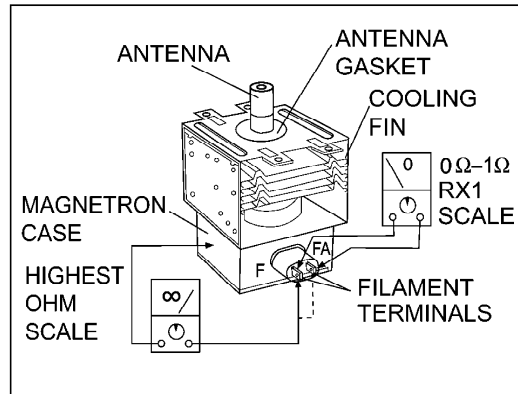
1. Unplug lead wires from Inverter Power Supply (U) primary terminals.
2. Connect test probes of ohm meter to the disconnected leads that were connected to Inverter Power Supply (U).
3. Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.
Normal continuity readings should be as follows.

Door Opened	Door Closed
0 Ω	∞ Ω

5.3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.

1. Isolate magnetron from the circuit by disconnecting the leads.
2. A continuity check across magnetron filament terminals should indicate one ohm or less.
3. A continuity check between each filament terminal and magnetron case should read open.

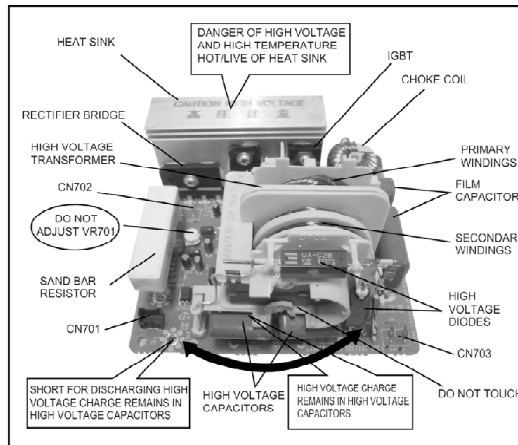


5.4. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

5.5. Inverter power supply (U)

DO NOT try to REPAIR H.V. Inverter power supply (U). Replace complete H.V. Inverter(U) Unit.



DANGER HIGH VOLTAGE

Test if failure codes of H95, H97 or H98 appear by doing the following procedure. It is recommended to use an AC line input current Ampere meter for testing.

Test1

1. Program DPC.

- A. Press [Timer] pad twice.
 - B. Press [Start] pad once.
 - C. Press [Micro Power] pad once.
2. Place 1 litre of water load into oven cavity.
 3. Unplug 2 pin H.V. lead wire connector CN703 from magnetron tube.
 4. Program oven at High power for 1 minute and press start.
 - A. After approximately 23 seconds, oven stops.
 - B. During oven operation, input current is approximately 0.5 to 1A.
 If both a and b are OK, proceed to test 2.

	INPUT AMPERE	FAILURE CODE
Unplug CN703	0.5 to 1A	Oven stops in 23 seconds after started.

Test2

Continued from Test 1

1. Unplug 3 pin connector CN701. CN703 remains unplugged.
2. Program oven at High power for 1 minute and press start.
 - A. After approximately 3 seconds, oven stops.
 - B. During oven operation, input current is approximately 0.4A.

	INPUT AMPERE	FAILURE CODE
Unplug CN701	<0.4A	Oven stops in 3 seconds after started.

If both a and b check OK, the Inverter Power Supply (U) can be determined to be OK.

5.6. Temperature thermistor

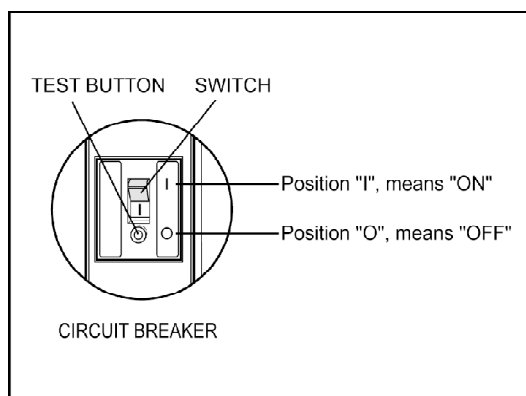
These sensor monitors the heat produced by the heater circuit and maintains the magnetron temperature which user had selected. Normal room temperature 10°C to 30°C, the reading across the temperature thermistor should be as follows.

TEMP	MAGNETRON THERMISTOR	STEAM HEATER THERMISTOR	OVEN THERMISTOR
100°C	30-60K Ω	10-20K Ω	10-20K Ω
25°C	700K-1.5M Ω	100K-300K Ω	100K-300K Ω

If the resistance reading is out of the range stated here, the thermistor is defective and must be replaced.

5.7. Circuit breaker

1. Turn the switch of circuit breaker to the "I" position and then plug in the oven.
2. Press the "TEST" button on circuit breaker, if the switch jump back to "O" position, you may decide the circuit breaker functions properly.



6. MEASUREMENTS AND ADJUSTMENTS

6.1. Adjustment of Primary latch switch, Secondary latch switch and Short switch.

1. Mount the Primary latch switch, the Secondary latch switch and the Short switch to the door hook assembly as shown in illustration.

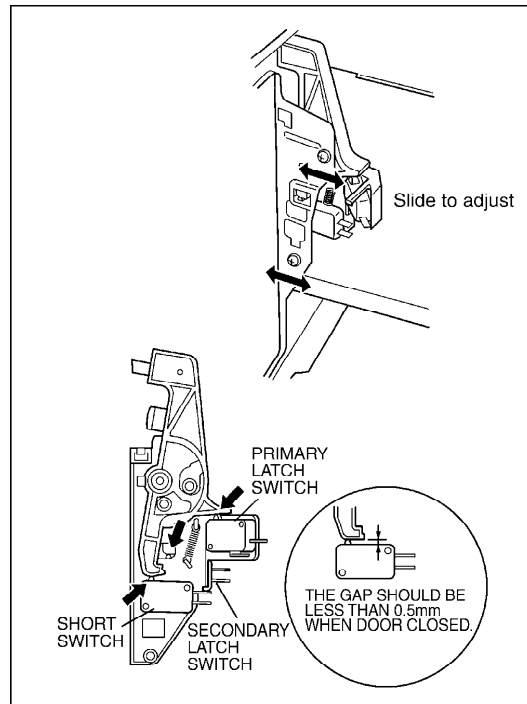
NOTE:

No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.

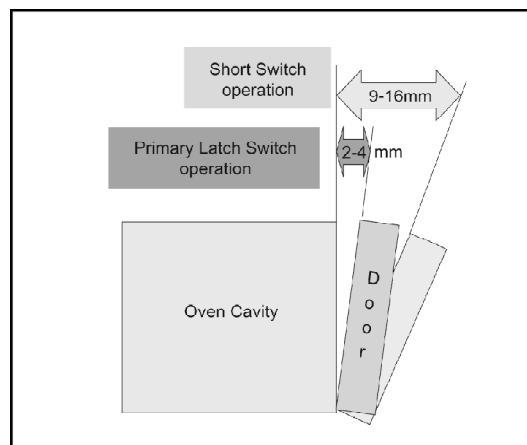
2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration so that the oven door will not have any

play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

3. Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.



4. The Primary latch switch must be ON when the space between upper portion of door A and cavity front plate is 2~4mm, if the door gap is greater than 4mm, the Primary latch switch must be OFF.



If alignment is poor, oven may not operate after convection/grill use.

6.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

- 1 litre beaker
- Glass thermometer
- Wrist watch or stopwatch

NOTE:

Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. Fill the beaker with exactly one litre of tap water. Stir the water using the thermometer and record the water's temperature. (recorded as T1).
2. Place the beaker on the center of glass tray. / Set the oven for High power and heat it for exactly one minute.
3. Stir the water again and read the temperature of the water. (recorded as T2).
4. The normal temperature rise at High power level for each model is as shown in table.

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1000W	Min.8.5°C

7. TROUBLESHOOTING GUIDE

DANGER HIGH VOLTAGES



1. **DO NOT RE-ADJUST PRESET CONTROL** on the H.V.Inverter (U). It is very dangerous to repair or without proper test equipment because this circuit handles very large current and high voltage. a misaligned inverter circuit is dangerous.
2. Ensure proper grounding before checking for trouble.
3. Be careful of the high voltage circuitry, taking necessary precautions when troubleshooting.
4. Discharge high voltage remaining in the H.V.Inverter (U).
5. When checking the continuity of the switches or the H.V.Inverter, disconnect one lead wire from parts and then check continuity with the AC plug removed. To do otherwise may result in a false or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be damaged and the connector cannot be removed.
6. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel. Always touch yourself to ground while working on this panel to remove any static charge in your body.
7. 220/240V AC is present on the digital programmer circuit (Terminals of power relay's and primary of Digital Programmer Circuit). When troubleshooting, be cautious of possible electrical shock!

Before troubleshooting, operate the microwave oven following the correct operating procedures in the instruction manual in order to find the exact cause of any trouble, since operator error may be mistaken for the oven's malfunction.

Self diagnostic display

Oven has self diagnostic function but it will not be activated in normal operation mode. To show self diagnostic result, please take the following steps.

1. Firstly, you must program the DPC into TEST MODE (Plug-in oven → press [Timer] pad twice → press [Start] pad once → press [Micro Power] pad once.)
2. Keep pressing [[Timer]] pad for more than 2 seconds until buzzer beeps.
3. Press [Start] pad twice, oven will show error code.

NOTE:

1. If any error was observed, it will be kept in memory up to 3 errors in the past. If there are more than 4 cases, the memory will renew the latest 3 errors codes.
2. Press [Start] pad again, one more older error code will be displayed.
3. If the oven is ok, it will show "000" and blinking.

4. Error cod list

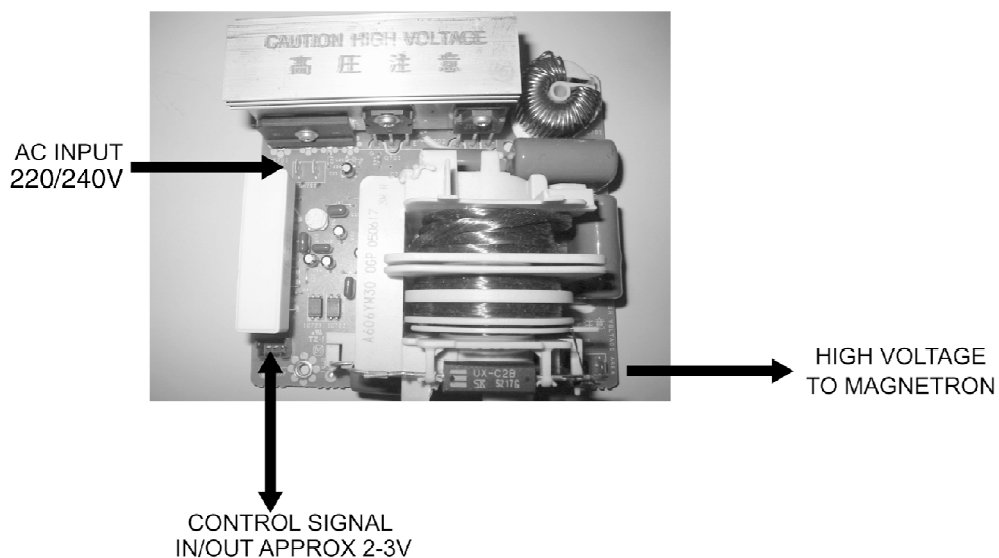
H** Hardware problem, oven itself has problem.

U** Usage problem such as run out of water and oven itself works well.

Error code	Cause for error
H99	Inverter on/off control error
H98	Magnetron no oscillation error
H97	Inverter input error
H96	Inverter custom IC error
H95	Inverter input failure
H90	Power down controlled by Inverter thermistor
H39	Steam heater thermistor failure
H32	Magnetron thermistor failure
H30	Oven thermistor failure
H02	Memory IC error (It is able to show up both in test mode and cooking mode)
H00	RAM failure (It is able to show up both in test mode and cooking mode)
H20	Steam heater open error
	Usage problem
U14	No water during steam cooking (It is able to show up both in test mode and cooking mode)
U40	No load operation, controlled by magnetron thermistor
U65	Power down controlled by Inverter thermistor
HOT	Oven is hot (It is able to show up both in test mode and cooking mode)

7.1. (Troubleshooting) Oven stops operation during cooking

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven stops in 3 seconds after pressing start pad.	No input AC is supplied to H.V.Inverter (U) CN702 terminals	1. Latch Switch 2. Power relay RY1 3. Loose lead wire connector CI CN702
	Oven stops in 23 seconds after pressing start pad.	H.V.Inverter (U) operates by the control signals from DPC but magnetron is not oscillating	1. Magnetron 2. Loose lead wire connector CI
	Oven stops in 1 minute after pressing start pad. (Convection/Grill convection cooking)	Oven thermistor circuit is not functions.	1. Oven thermistor 2. Loose wiring
	Oven stops in 30 seconds after pressing start pad. (Steam cooking)	Steam heater thermistor circuit is not functions.	1. Steam heater thermistor 2. Loose wiring 3. bad conductivity between th and steam heater
2.	No display and no operation at all. Fuse is blown.	Most probably loose connection of connectors, or door latch mechanism is not adjusted properly	1. Align door, Door Latch Switch 2. Loose wiring connectors



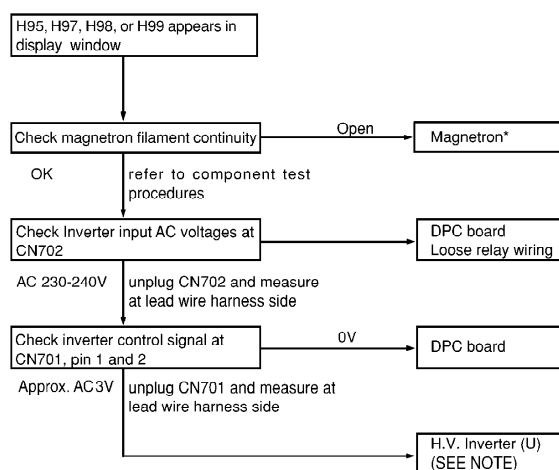
7.2. (Troubleshooting) Other problems

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Defective circuit breaker 2. The switch of circuit breaker is in "O" position 3. Open or loose lead wire harness 4. Open thermal cutout / thermistor 5. Open low voltage transformer 6. Defective DPC	Turn the switch of circuit I "I" position. Check fan motor if therma defective.
2.	No display and no operation at all. / Fuse is blown.	1. Shorted lead wire harness Defective primary latch switch 2. (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter Power Supply (U) NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay B (RY1)'s contacts (between 1 and if it has continuity, replace power relay B (RY1) also.	Check adjustment of prim secondary latch switch an switch including door.
3.	Oven does not accept key input(Program)	1. Key input is not in proper sequence 2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation procedi Refer to DPC troubleshoot
4.	Fan motor turns on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch	Adjust door and latch swit

	SYMPTOM	CAUSE	CORRECTIONS
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches Open or loose connection of high voltage circuit especially magnetron filament circuit 2. Defective high voltage component H.V. Inverter Power Supply (u) Magnetron NOTE: Large contact resistance will cause lower magnetron filament voltage and cause magnetron to have lower output and/or be intermittent. 3. Defective primary latch switch 4. Open or loose wiring of power relay B (RY1) 5. Defective DPC or power relay B (RY1)	Adjust door and latch switch Check high voltage component according to component test procedure and replace if it defective. Refer to DPC troubleshooting
6.	Oven can program but timer does not start countdown.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit.(Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	1. Shorted primary latch switch	
9.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check grounding connection escutcheon base.
10.	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
11.	Heater does not turn on.	1. Open or loose wiring of heater 2. Defective heater 3. Defective power relay 4. Defective DPC	
12.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout	Adjust door and latch switch

7.3. Troubleshooting of inverter circuit (U) and magnetron [NEW H.V.]

This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H95, H97, H98 and H99 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H95, H97, H98 and H99. First, you must program the DPC into TEST MODE, press [Timer] pad twice → Press [Start] pad once → press [Micro Power] pad once. Program unit for operation. H95, H97, H98, H99 appears in display window a short time after start key is pressed and there is no microwave oscillation.



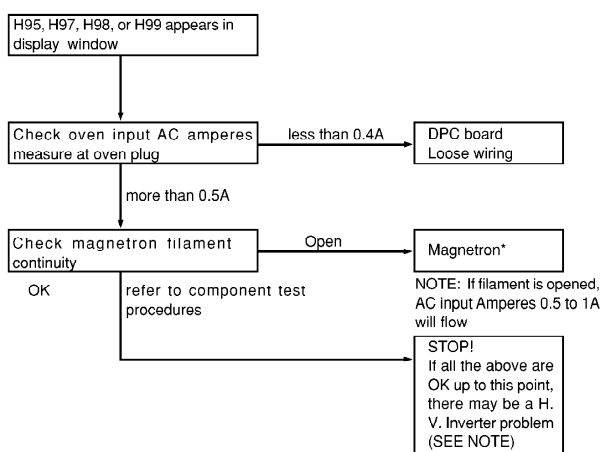
NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET CONTROL on the board. It is very dangerous to repair or adjust without proper test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to case before proceeding to determine a good magnetron.

Alternate way to troubleshoot oven with AC Ampere meter used

H95, H97, H98, H99 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampere meter used for troubleshooting.



NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET CONTROL on the board. It is very dangerous to repair or adjust without proper test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to case before proceeding to determine a good magnetron.

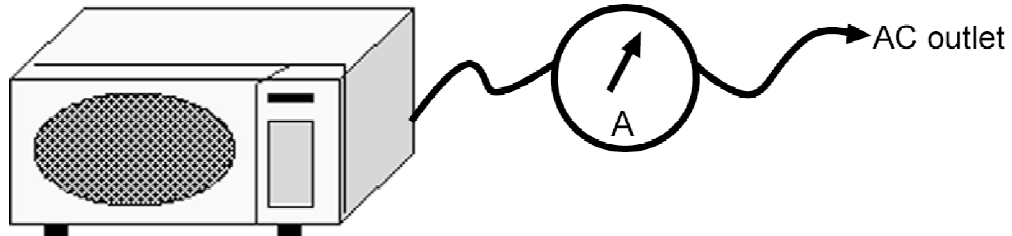
7.4. Simple way of H.V. Inverter/magnetron troubleshooting

Purpose:

Simple way (3/23 seconds rule) of identifying whether it's Magnetron, Inverter or others.

Set-up:

The unit under question is connected through the Ammeter as shown below.

**Procedure:**

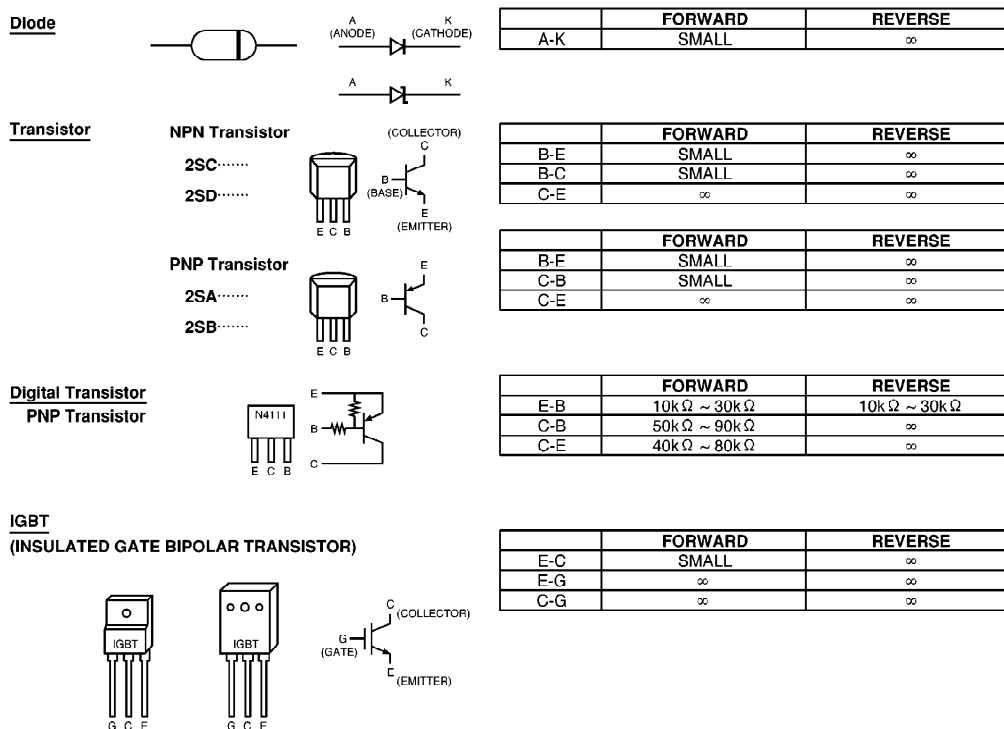
Follow the matrix table below to identify the problem source.

Note:

Do not replace both Inverter board and Magnetron simultaneously and automatically without going through this procedure.

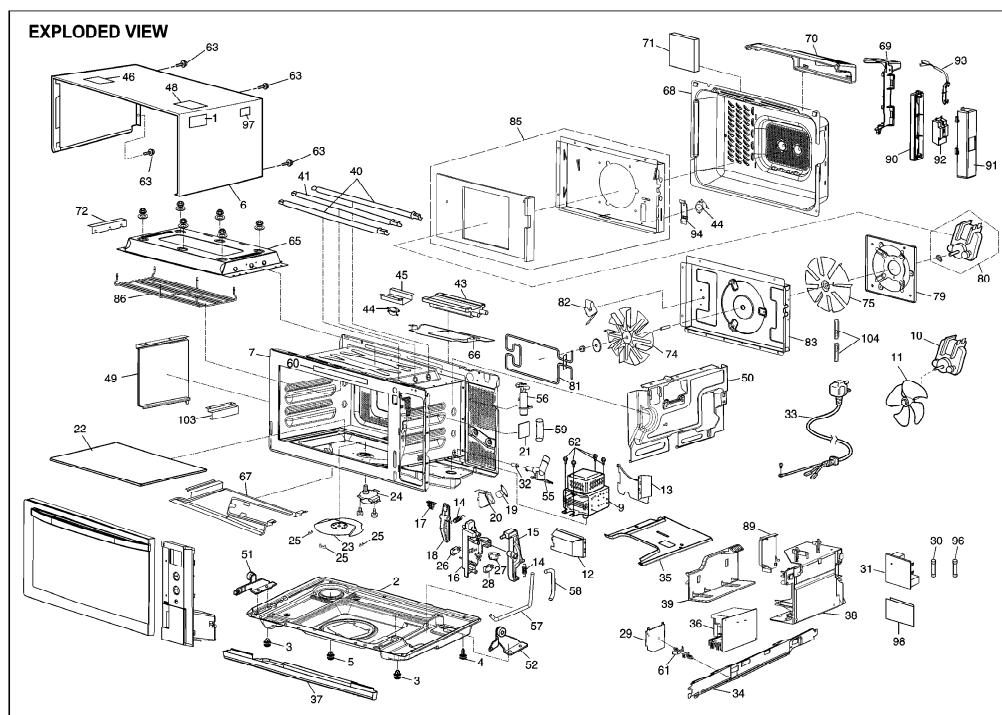
Power will:	Ammeter reading is:	To do:	Remedy:
Shut off in 23 seconds after "Start".	1. Between 0.5A and 1.0A.	Check and repair open magnetron circuit	Open magnetron wire between Inverter and magnetron terminal.
	2. Between 1.0A and 2.0A.	Check continuity of D702 in Inverter PCB.	
			
		1. D702 shorted	Replace H.V.Inverter (F606YM300GP)
Shut off in 3 seconds after "Start"	1. Less than 0.5A	2. D702 is OK	Replace magnetron
		Check open circuit: Latch Switch, DPC, Power Relay and CN701	Replace defective component(s), or co switch, cables and connectors.

7.5. How to check the semiconductors using an OHM meter



8. EXPLODED VIEW AND PARTS LIST

8.1. EXPLODED VIEW



8.2. PARTS LIST

NOTE:

1. When ordering replacement part(s), please use part number(s) shown in this part list.

Do not use description of the part.

2. Important safety notice:

Components identified by  mark have special characteristics important for safety.

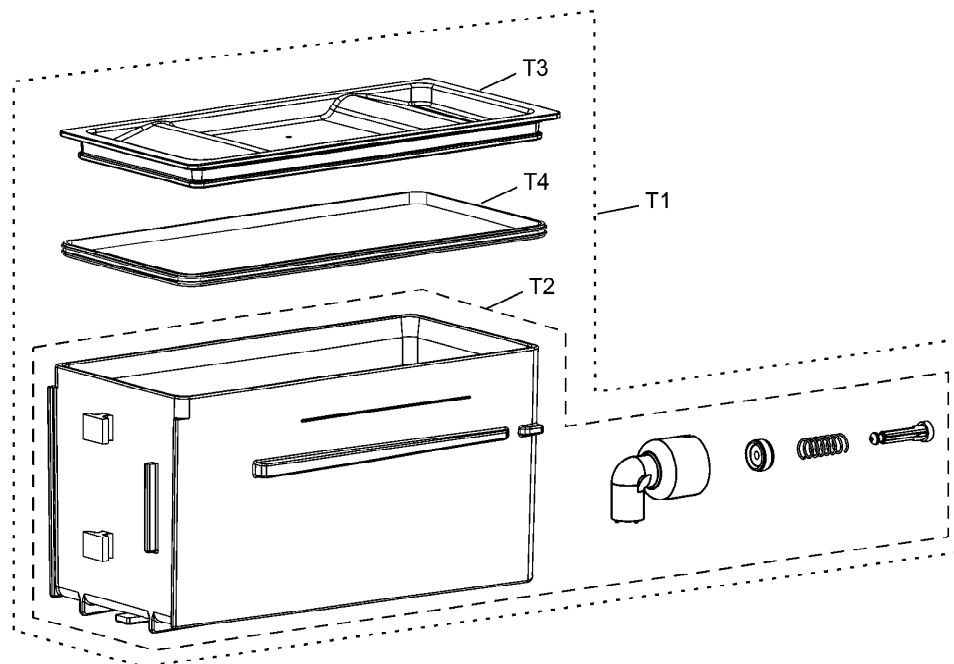
When replacing any of these components, use only manufacture's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		Z00064080BP	CAUTION LABEL	1	BPQ
1		Z00069000EP	CAUTION LABEL	1	EPG,SPG,WPG
2		Z10016Y40XPG	BASE	1	
3		Z10087J60XP	RUBBER FOOT	2	
4		Z10084T00AP	RUBBER FOOT	1	
5		Z1008-1F90	RUBBER FOOT	1	
6		Z11556Y40SBP	CABINET BODY	1	
7		Z200A6Y40BP	OVEN	1	
9		Z2M261-M32J4	MAGNETRON	1	
10		Z400A7J70MP	FAN MOTOR	1	
11		Z40085G10XN	FAN BLADE	1	
12		Z40256Y40BP	AIR GUIDE A	1	
13		Z40267J70XPG	AIR GUIDE B	1	
14		Z30977J70XP	SPRING	2	
15		Z31027J70XP	LATCH SWITCH LEVER	1	
16		Z31037J70XP	DOOR HOOK	1	
17		Z31057J70XP	LATCH BRACKET	1	
18		Z32497J70XP	LATCH SWITCH LEVER	1	
19		Z612E6Y40BP	INCANDESCENT LAMP(U)	1	
20		Z60746Y40XPG	INCANDESCENT LAMP BRACKET	1	
21		Z64377J70XP	GLASS	1	
22		Z010T6Y40BP	CERAMIC PLATE (U)	1	EPG, SPG, WPG
22		Z010T6Y40BN	CERAMIC PLATE (U)	1	BPQ
23		Z202K6Y40BPG	ANTENNA STIRRER (U)	1	
24		Z61447J70XP	STIR MOTOR	1	
25		Z20197J70XP	ANTENNA BRACKET	3	
26		Z61425U30XN	MICRO SWITCH	1	(V-15G-3C25) (PRIMARY LATCH SWITCH)
27		Z61425180AP	MICRO SWITCH	1	(D3V-16G-3C25) (SECONDARY LATCH SWITCH)
28		Z61785180AP	MICRO SWITCH	1	(D3V-1G-2C25) (SHORT SWITCH)
29		Z603Y6Y40XP	D.P.CIRCUIT (DU)	1	
30		Z62304210BP	FUSE	1	10A/250V
31		Z692Y6Y40BP	NOISE FILTER (U)	1	
32		Z45006Y40XP	JACKET	1	
33		Z900C6Y40BP	AC CORD W/PLUG	1	BPQ
33		Z900C6Y40EP	AC CORD W/PLUG	1	EPG,SPG
33		Z900C6Y40WP	AC CORD W/PLUG	1	WPG
34		Z20347J70XPG	INVERTER BRACKET A	1	
35		Z2036-1K00	INVERTER BRACKET B	1	

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
36		Z606Y6Y40BP	H.V.INVERTER (U)	1	
37		Z80236Y40BP	DECORATING PLATE (COLLECTOR PAN)	1	
38		Z6585-1K00	INVERTER BRACKET A	1	
39		Z67637J70XP	INVERTER BRACKET B	1	
40		Z630G6Y40BP	HEATER	2	BPQ,EPG
40		Z630G6Y40SP	HEATER	2	SPG,WPG (450W/115V)
41		Z630G6Y40BP	HEATER	1	BPQ,EPG
41		Z630F6Y40SP	HEATER	1	SPG,WPG (450W/230V)
43		Z611E6Y40BP	HEATER (DU)	1	BPQ
43		Z611E6Y40EP	HEATER (DU)	1	EPG,SPG,WPG
44		Z61457J70XP	THERMAL CUTOOT	2	
45		Z66266Y40XPG	THERMAL CUTOOT BRACKET	1	
46		Z01505R00BP	NO TOUCHING LABEL	1	BPQ
48		Z01508G60HP	NO TOUCHING LABEL	1	EPG,SPG,WPG
49		Z22377J70XPG	LEFT HEATER PANEL	1	
50		Z22367J70XPG	RIGHT HEATER PANEL	1	
51		Z300B7J70XP	LEFT HINGE (U)	1	
52		Z300U7J70XP	RIGHT HINGE (U)	1	
55		Z44966Y40XP	NOZZLE A	1	
56		Z45137J70XP	TIE-IN C	1	
57		Z92017J70XP	COPPER PIPE	1	
58		Z46507J70XP	TUBE C	1	
59		Z92047J70XP	TUBE D	1	
60		Z03346Y40BP	MENU LABEL	1	BPQ
61		Z90717J70XP	SUPPORT	1	
62		ZTWFA4+12T	SCREW	4	FOR MAGNETRON
63		ZTWFA4+12D	SCREW	4	FOR CABINET BODY
65		Z202Q6Y40BP	UPPER HEATER PANEL	1	
66		Z15676Y40XP	DRIP PLATE	1	
67		Z22776Y40XP	LOWER HEATER PANEL	1	
68		Z10596Y40EP	BACK COVER	1	
69		Z10586Y40BP	SIDE COVER	1	
70		Z10576Y40XP	BACK COVER C	1	
71		Z40306Y40BP	EXHAUST GUIDE D	1	
72		Z41706Y40BP	HEATER MOUNTING PLATE	1	
74		Z22394V00BP	CONVECTION FAN BLADE	1	
75		Z41594V00BP	COOLING FAN BLADE	1	
79		Z41806Y40BP	CONVECTION FAN BRACKET	1	
80		Z490S6Y40XP	CONVECTION FAN MOTOR	1	
81		Z631D6Y40BP	CONVECTION HEATER	1	BPQ
81		Z631D6Y40EP	CONVECTION HEATER	1	EPG,SPG,WPG
82		Z64174V00BP	HEATER BRACKET A	1	
83		Z66796Y40BP	CONVECTION INSIDE COVER A	1	
85		Z607J6Y40BN	CONVECTION ASSEMBLY(BU)	1	(INCLUDING IN CONVECTION OUTSIDE COVER B & ADIABATIC MATERIAL)
86		Z67356Y40XP	HEATER PROTECTOR	1	
89		Z40276Y40BP	INVERTER AIR GUIDE	1	
90		Z50586Y40XP	BRACKET	1	
91		Z50596Y40XP	COVER	1	
92		Z60586Y40BP	CIRCUIT BREAKER	1	
93		Z03586Y40BP	CIRCUIT BREAKER HARNESS	1	
94		Z66286Y40BN	THERMAL CUTOOT BRACKET	1	
96		Z6331-1T50	FUSE	1	15A/250V

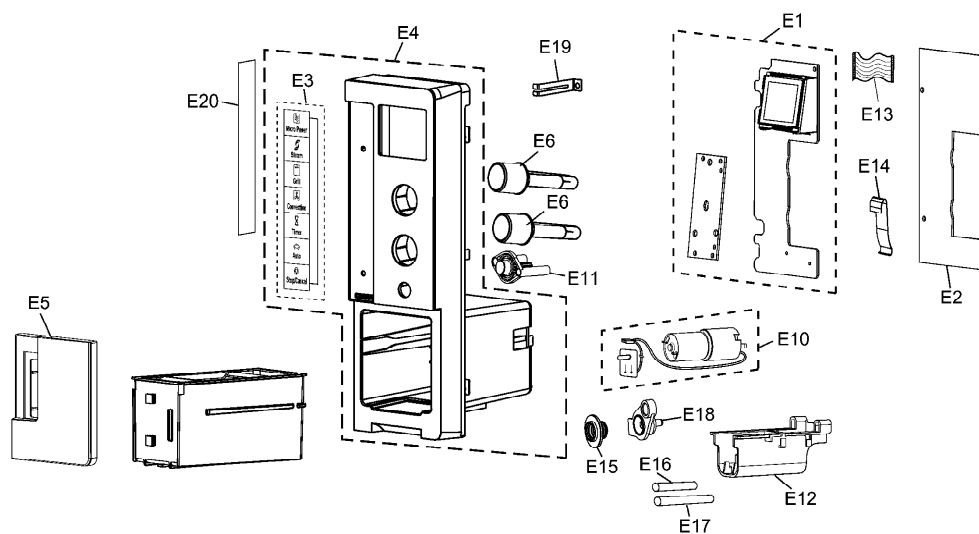
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
97	Z04906Y40EP	ENERGY LABEL	1	EPG
98	Z15607J70ZP	ALUMINUM PLATE	1	
103	Z11656Y40KT	REINFORCE BRACKET E	1	
104	Z67576Y40BP	HEATER BRACKET D	2	

8.3. WATER TANK ASSEMBLY



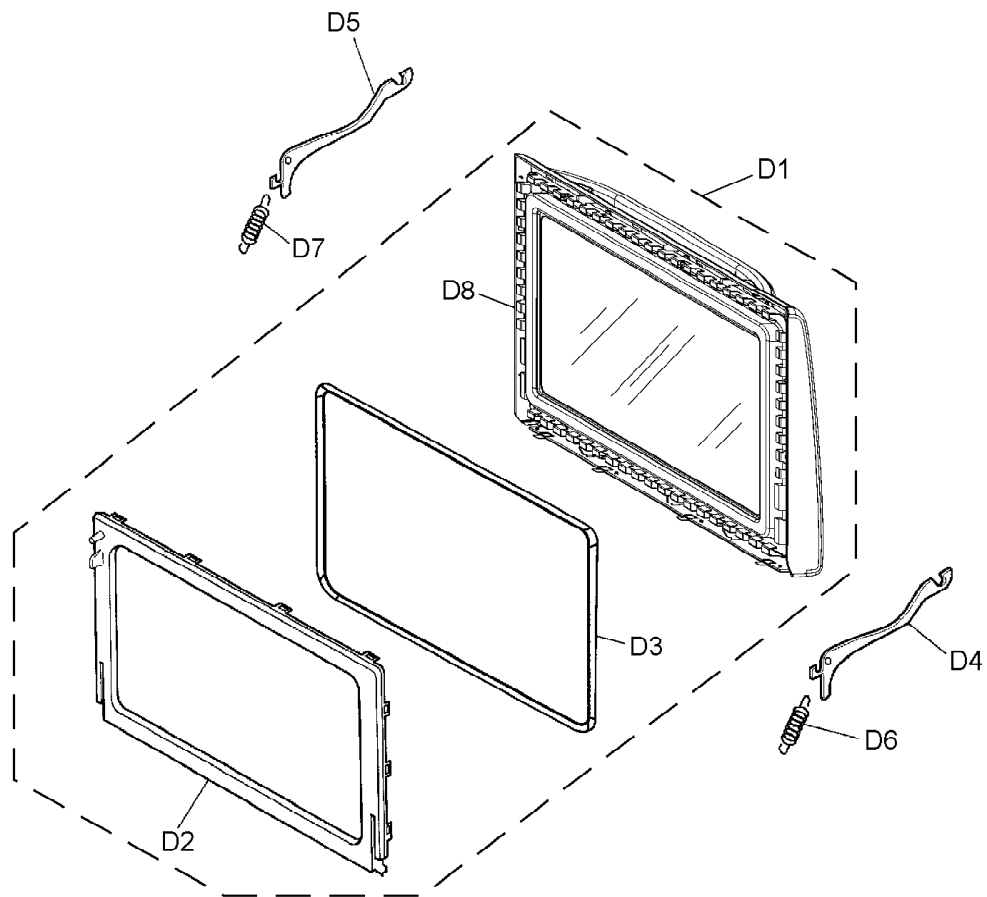
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
T1	Z060Q6Y40XP	WATER TANK (U)	1	(INCLUDING TANK COVER & SEAL)
T2	Z061A6Y40XP	WATER TANK	1	
T3	Z06116Y40XP	TANK COVER	1	
T4	Z44247J70XP	SEAL	1	

8.4. ESCUTCHEON BASE ASSEMBLY



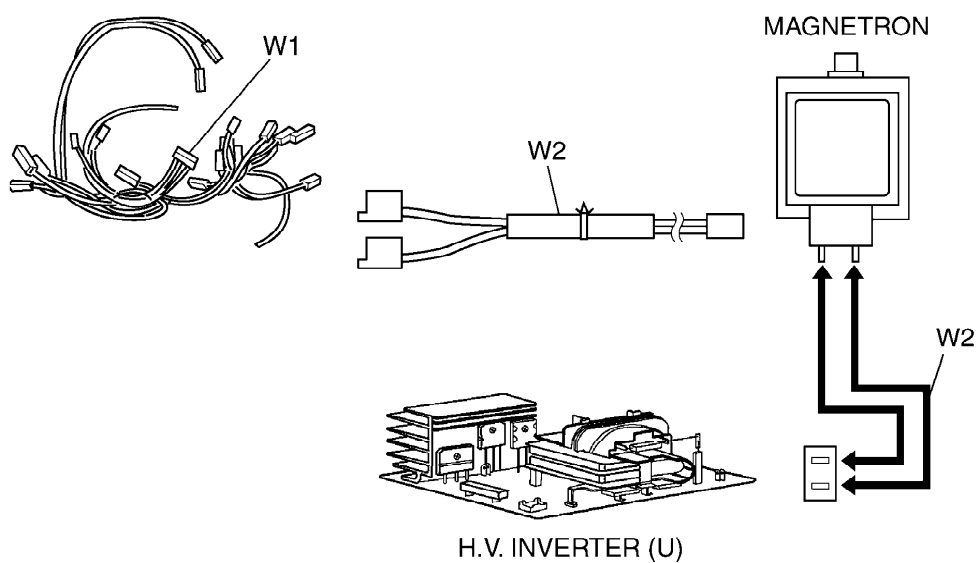
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
E1	Z603L6Y40BP	D.P.CIRCUIT (AU)	1	BPQ
E1	Z603L6Y40EP	D.P.CIRCUIT (AU)	1	EPG
E1	Z603L6Y40SP	D.P.CIRCUIT (AU)	1	SPG,WPG
E2	Z605S6Y40BP	D.P.CIRCUIT (HU)	1	BPQ,EPG
E2	Z605S6Y40SP	D.P.CIRCUIT (HU)	1	SPG,WPG
E3	Z630Y6Y40SBP	MEMBRANE SWITCH(U)	1	
E4	Z800A6Y40SBP	ESCUTCHEON BASE (U)	1	BPQ (INCLUDING MEMBRANE SWITCH(U))
E4	Z800A6Y40SEP	ESCUTCHEON BASE (U)	1	EPG,SPG,WPG (INCLUDING MEMBRANE SWITCH(U))
E5	Z800B6Y40SBP	ESCUTCHEON BASE (BU)	1	
E6	Z803G6Y40SBP	POP-UP DIAL (U)	2	
E10	Z400L6Y40XP	PUMP-LED(U)	1	(INCLUDING PUMP & LED PCB)
E11	Z83876Y40BP	BUTTON	1	
E12	Z06397J70XP	PUMP BRACKET	1	
E13	Z66166Y40BP	FLAT CABLE	1	(WIDE ONE)
E14	Z66166Y40XP	FLAT CABLE	1	(NARROW ONE)
E15	Z44266Y40BP	SEAL B	1	
E16	Z46487J70XP	TUBE A	1	
E17	Z46497J70XP	TUBE B	1	
E18	Z45126Y40BP	TIE-IN B	1	
E19	Z80876Y40BP	GROUNDING PANEL	1	
E20	Z00076Y40BP	NAME PLATE	1	BPQ
E20	Z00076Y40EP	NAME PLATE	1	EPG
E20	Z00076Y40SP	NAME PLATE	1	SPG
E20	Z00076Y40WP	NAME PLATE	1	WPG

8.5. DOOR ASSEMBLY



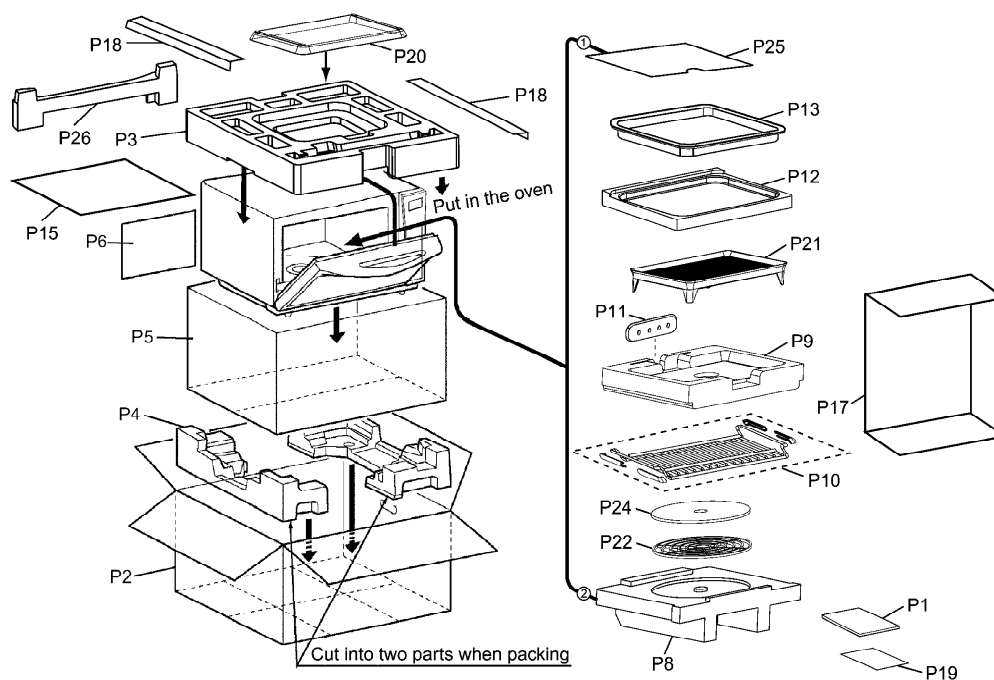
Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1	⚠	Z390L6Y40SBP	DOOR(U)	1	BPQ (INCLUDING DOOR C & SEAL)
D1	⚠	Z390L6Y40SEP	DOOR(U)	1	EPG,SPG,WPG (INCLUDING DOOR C & SEAL)
D2	⚠	Z30856Y40XP	DOOR C	1	
D3		Z3334-1K00	SEAL	1	
D4		Z30546Y40BP	DOOR ARM (LEFT)	1	
D5		Z30446Y40BP	DOOR ARM (RIGHT)	1	
D6		Z32316Y40BP	DOOR KEY SPRING A	1	
D7		Z32306Y40BP	DOOR KEY SPRING B	1	
D8	⚠	Z302A6Y40SBP	DOOR B (U)	1	BPQ
D8	⚠	Z302A6Y40SEP	DOOR B (U)	1	EPG,SPG,WPG

8.6. WIRING MATERIALS



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
W1	Z030A6Y40BP	LEAD WIRE HARNESS	1	BPQ,EPG
W1	Z030A6Y40SP	LEAD WIRE HARNESS	1	SPG,WPG
W2	Z030E-1K00	H.V.LEAD WIRE	1	

8.7. PACKING AND ACCESSORIES



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
P1	Z00036Y40BP	INSTRUCTION MANUAL	1	BPQ
P1	Z00036Y40EP	INSTRUCTION MANUAL	1	EPG
P1	Z00036Y40SP	INSTRUCTION MANUAL	1	SPG
P1	Z00036Y40WP	INSTRUCTION MANUAL	1	WPG
P2	Z01026Y40BP	PACKING CASE,PAPER	1	BPQ
P2	Z01026Y40EP	PACKING CASE,PAPER	1	EPG, SPG, WPG
P3	Z01046Y40BP	UPPER FILLER	1	
P4	Z01056Y40BP	LOWER FILLER	1	
P5	Z01066Y40XP	P.E BAG	1	
P6	Z01078100XN	DOOR SHEET	1	
P8	Z01146Y40BP	FOAM	1	
P9	Z01136Y40BP	FOAM	1	
P10	Z060V6Y40BP	OVEN RACK(U)	1	
P11	Z60037J70XP	CERAMIC COVER	1	
P12	Z01126Y40BP	FOAM	1	
P13	Z06037J70XP	CRISPY PAN	1	
P15	Z01926Y40XP	SHEET	1	
P17	Z01096Y40XP	SHEET	1	
P18	Z01896Y40XP	PROTECT CORNER	2	
P19	Z02246Y40BP	NOTICE	1	
P20	Z07496Y40BP	ENAMEL SHELF	1	
P21	Z06786Y40BP	PLASTIC TRIVET	1	
P22	Z07096Y40BP	ANTI SPARK RING	1	
P24	Z01086Y40BP	TRAY PACKING A	1	
P25	Z01177J70XP	TRAY PACKING B	1	
P26	Z01466Y40EP	FRONT FILLER	1	EPG

9. DIGITAL PROGRAMMER CIRCUIT

9.1. SCHEMATIC DIAGRAM

